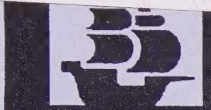


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SOURCE REDUCTION AND RECYCLING ELEMENT

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Prepared by:



Integrated Recycling, Inc.
1817 Capitol Ave., Suite E
Sacramento, CA 95814



Community Environmental Council
930 Miramonte Drive
Santa Barbara, CA 93109



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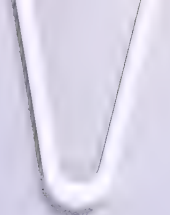
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Appendix





EXECUTIVE SUMMARY

The management of solid waste has become an issue of major importance in the City of Santa Maria and in the State of California as the amount of solid waste being generated and disposed continues to grow dramatically every year. Concurrently, the state is experiencing a formidable challenge in what to do with all the waste - we are rapidly running out of places to dispose of it. With over 90 percent of solid waste presently being disposed of in landfills, remaining landfill space is expected to reach capacity by the mid-1990s. Meanwhile, the amount of waste disposed of per capita in California continues to be among the highest in the country.

In an effort to address current solid waste problems in a comprehensive and effective manner, the California Legislature in 1989 enacted the California Integrated Waste Management Act, Assembly Bill 939 and Senate Bill 1322 (Chapters 1095 and 1096, Statutes of 1989), which established aggressive solid waste diversion mandates for local government. The law requires each city and county to divert 25 percent of its waste from landfills by 1995, and 50 percent of its waste by the year 2000.

It was the intent of the legislation that cities and counties take a planned, coordinated and integrated approach to the management of waste in their jurisdictions. The law requires every city and county to prepare a Source Reduction and Recycling Element, and each county to prepare a Countywide Integrated Waste Management Plan and Countywide Siting Element, for adoption and submission to the California Integrated Waste Management Board (Board). Additionally, the subsequent enactment of Assembly Bill 2707 (Chapter 1406, Statutes of 1990), requires jurisdictions to prepare, adopt and submit to the Board a Household Hazardous Waste Element.

This document is the Source Reduction and Recycling Element (SRRE) for the City of Santa Maria. The SRRE complies with the mandates of California law, Public Resources Code (PRC), beginning with Section 40000, and is consistent with the waste management hierarchy provided in PRC Section 40051.

Further, the SRRE adopted by the City of Santa Maria meets the requirement to:

“place primary emphasis on implementation of all feasible source reduction, recycling, and composting programs while identifying the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reduced at the source, recycled, or composted.” (PRC 41002)

BACKGROUND

CITY DEMOGRAPHICS AND WASTE MANAGEMENT STRUCTURE

With a population of 55,200 (Forecast 89, Santa Barbara County), the City of Santa Maria comprises 15.4% of the county's population of 359,511 (including Vandenberg Air Force Base), rendering it the second largest city in the County of Santa Barbara.

Individual jurisdictions in the county administer solid waste management, refuse disposal is provided by both public and private systems, and all landfills in the county are publicly owned and operated. The waste hauler for the City of Santa Maria is the City's Department of Public Works and Health Sanitation Services for approximately 15% of the City. The landfill used is the City of Santa Maria Landfill.

DEVELOPMENT AND ADOPTION OF SRRE

In conjunction with Integrated Recycling Inc. and the Community Environmental Council, the Cities and County of Santa Barbara have coordinated and cooperated in the preparation of the Source Reduction and Recycling Element. A waste generation study was conducted by R. W. Beck and Associates for the County of Santa Barbara to include unincorporated county, City of Carpinteria, City of Guadalupe, City of Lompoc, City of Santa Barbara, City of Santa Maria, City of Solvang, and Vandenberg Air Force Base.

RELATIONSHIP OF CITY SRRE TO COUNTYWIDE IWMP

AB 939 requires each city to submit by July 1, 1991 its final Source Reduction and Recycling Element (SRRE) for incorporation into the Countywide Integrated Waste Management Plan (CIWMP). Based on county landfill capacity, the County of Santa Barbara's CIWMP is due to the California Integrated Waste Management Board in 1994.

SRRE STRUCTURE AND FORMAT

Each city and county SRRE represents an identification of the jurisdiction's existing waste generation, and current and planned programs designed to meet the 25 and 50 percent diversion requirements. Integrated waste management means that local governments must make decisions on programs and activities that, when implemented in combination, will meet AB 939 goals, and consequently result in the integrated management of waste.

The SRRE begins with a description of the goals and objectives adopted by the City of Santa Maria for each of the major diversion programs selected. Specific objectives have been developed for each of these goals that are measurable, time-specific and quantified wherever feasible.

Diversion programs selected by cities and counties must rest on careful evaluation of alternatives available and the most effective methods of managing the particular kinds of waste generated by and disposed of in their communities. Specific criteria are set by the AB 939 regulations for the evaluation by local governments of program alternatives, which in the case of the Source Reduction and Recycling Components are designated by the Board. The legislation requires the inclusion of nine components in the SRRE which are described briefly in the following section.

SRRE COMPONENT OUTLINE

In general, SRRE components share a common format which includes establishment of short- and medium-term objectives, description of existing conditions, identification and evaluation of program alternatives, selection of diversion programs, and implementation plan. Several components also contain specific requirements to develop monitoring and evaluation procedures.

Solid Waste Generation Analysis

The SRRE contains an analysis of the Waste Generation Study which describes existing wastestream and diversion quantities and compositions. An understanding of a jurisdiction's waste is derived from the equation:

$$\text{Waste Disposed} + \text{Waste Diversion} = \text{Waste Generation (14 CRR, Section 18722)}$$

On the basis of the waste characterization and diversion studies, the estimated waste generation in the City of Santa Maria was found to be 162,063 tons per year. The Waste Generation Study found that Santa Maria is currently diverting 1.7% through source reduction and 5.1% through recycling. The remaining 93.2% is disposed of at the Santa Maria Landfill.

In general, predominant categories identified in the residential wastestream of the City of Santa Maria were found to be paper (36.5%), yard waste (35.2%), and other organics (11.5%). Residential waste contributes 24% to the City's total wastestream. The wastestream of the commercial sector, accounting for 53% of total waste, was characterized by a significant percentage of paper (43.1%), other organics (18.5%), and yard waste (12.4%). Finally, the prevalent waste categories present in the industrial wastestream were paper (56.6%), plastics (12.9%), and metals (11.9%). Industrial waste is 23% of Santa Maria's total wastestream.

Overall, the waste categories of paper, yard waste, other organics contribute the largest percentages to the total wastestream in the City of Santa Maria. Waste materials prevalent in the City's wastestream include corrugated cardboard, mixed and other paper, food waste, tires and rubber, textiles, hard plastics, and ferrous metals.

The waste generation analysis summarizes the key findings of the Waste Generation Survey, and assists cities and counties in developing source reduction and recycling programs that most appropriately address the individual needs and conditions of their jurisdiction.

Source Reduction Component

The preferred waste management method in an integrated approach is to reduce the amount of waste being created in the first place -- a front-end, preventive approach referred to as source reduction. From a logical perspective, it makes better sense to prevent waste in the first place than to have to manage it once it has been generated. As noted in the Source Reduction Component, and consistent with the waste management hierarchy established by the Board, source reduction programs represent the highest priority in the waste management efforts of the City of Santa Maria. Although at least initially, source reduction will yield a minimal diversion rate, it plays an important role in net reduction in waste generation.

In order to capture the current rate of source reduction in the City of Santa Maria, a mail and telephone survey was conducted of businesses and institutions that were identified as potential employers of source reduction practices and programs. Survey results identified a 1.7% source reduction diversion of materials, primarily comprised of grass clippings, repair of white goods, and reuse of miscellaneous items.

Response to the survey was very limited, largely due to the current lack of knowledge regarding source reduction and difficulty in quantifying source reduction activities. However, in the long term, as educational programs heighten awareness of source reduction and adequate methodology is developed by which to measure these activities, the City of Santa Maria expects to obtain a more accurate measurement of its source reduction programs and achieve significantly higher rates of diversion.

The focus of the source reduction program planned by the City of Santa Maria is to change the product design and packaging practices of manufacturers and consumer buying habits and waste generation patterns. The City's program will focus on the following source reduction activities:

- Develop and disseminate source reduction education as part of the campaign discussed in the Education and Public Education Component.
- Study the feasibility of establishing a variable can rate.
- Study the feasibility of establishing a pilot drop-off area for recoverable items at the Santa Maria Landfill.
- Study the feasibility of reduce or waiving business license fees for “source reduction” businesses.
- Actively promote backyard composting.
- Provide technical assistance to the commercial and industrial sector.
- Establish an awards program to recognize significant local waste reduction activities.
- Adopt an official City procurement policy.

Recycling Component

The recycling component of the SRRE contains a description of existing and planned activities that result in the use of materials from waste to manufacture new products. Recycling encompasses a four-step process in which post-consumer wastes are collected, separated from other wastes, reconfigured to meet the specifications for manufacturers, and then marketed as material for new products. Critical elements of successful recycling programs are community and business participation, public education and promotion, and development of markets for recycled products.

The City of Santa Maria’s current recycling efforts rest primarily on buyback operations, Certified Redemption Centers, limited commercial office paper recovery and city purchase of recycled content paper, which contribute to a 5.1% diversion rate. The City has recently awarded a curbside collection contract to RALCCO for a variety of recycling program including single-family, multi-family and commercial collections. In developing the Recycling Component, the City of Santa Maria recognizes that a significant enhancement of recycling programs would be required to meet the diversion mandates of 25 and 50 percent. Accordingly, the City will participate in the development of regional mixed waste processing capability in the short-term planning period.

The City will implement the following recycling program over the short- and medium terms:

- Continue and expand existing curbside and buyback recycling where possible.
- Expand existing source separated collection of commercial and industrial recyclables.
- Implement a mulching programs for yard and wood wastes at the Santa Maria Landfill.
- Participate in scoping and development of mixed waste processing facility serving Santa Maria, Solvang, Guadalupe and surrounding unincorporated areas, possibly as an Integrated Diversion Facility providing both mixed waste processing and composting capabilities.
- Participate in local and regional materials market development activities.

Composting Component

Composting is rapidly becoming one of the most highly regarded methods of solid waste diversion, as it provides an opportunity to substantially reduce the large volume of yard waste and other organic material presently disposed in landfills. Composting is a process by which organic solid wastes, such as leaves and grass clippings, are biologically decomposed under controlled conditions to produce a relatively stable soil-like material. Compost products are likely to become one of the fastest growing recycled commodities, and consequently, may be the most difficult for which to develop markets. Compost products can be used as a soil conditioner and fertilizer.

Throughout the County of Santa Barbara, composting programs are expected to yield a significant amount of waste diversion over the medium-term planning period. Yard waste typically accounts for the largest, or second largest, component of the residential wastestream, making up approximately 10 to 30 percent of the total wastestream, with seasonal variation. Contributing 35.2% of residential waste, yard waste represents the second largest amount of material in Santa Maria's residential wastestream, and third largest (12.4%) in the City's commercial wastestream.

At the present time, no municipal or private composting activities are underway in the City of Santa Maria. The Composting Component recommends that the City work with the county and adjacent cities to coordinate the design and siting of a regional composting facility. The component selects a regionalized composting alternative for the medium-term that offers the capability of composting yard waste that has been collected separately and organic materials removed from the mixed wastestream at an Integrated Diversion Facility. Additionally, the City will pursue the following activities as part of its composting program in the short- and medium-terms:

- Participate with other jurisdictions in the region in the creation of a drop-off site at the Santa Maria Landfill for yard and wood waste.
- Establish curbside yard waste collection program for single-family households.
- Adopt fee incentives for commercial, agricultural and residential generators of yard waste
- Develop a local compost product market develop program.

The City considers the success of a composting program to be dependent upon the development of viable markets for the compost materials produced. The specifications of end-use markets have not yet been developed by the State, and as such, the State has indicated that the City and the county may have to proceed in advance of the availability of these specifications in order to meet their goals.

Special Waste Component

The Special Waste Component addresses those types of waste which require unique handling and disposal methods due to their unusual physical characteristics or hazardous nature. Examples of special wastes include tires, white goods, sofas and mattresses, and potentially hazardous wastes such as sewage sludge, asbestos, and medical waste. In many cases, the handling and disposal of special wastes requires permitting by multiple state and local regulatory authorities.

This component delineates existing special waste handling and disposal practices, a proposal for dealing with special wastes not currently permitted for disposal, and plans for managing future special waste. The City's program, in conjunction with the County of Santa Barbara, will manage three special wastes: tires, medical waste, and sewage sludge. Current methods of handling these wastes will be continued as feasible technological alternatives for recycling, reuse and source reduction are monitored and developed.

Education and Public Information Component

The Education and Public Information Component details the ways in which the City will educate and inform citizens about source reduction, recycling and composting programs. An important role of this component is to identify waste generators that will be targeted in the education and public information program.

The City of Santa Maria intends to participate in a countywide umbrella campaign being launched by the County of Santa Barbara. The County is taking a multi-faceted, synergistic approach to target the public, schools, consumers, business and institutions with activities and materials using one promotional slogan. The City will contribute to the funding of the education campaign and will have use of the slogan and concept in City promotional activities. In order to support and complement the education and public outreach provided by the County, a list of suggested activities has been developed for which the City of Santa Maria will be responsible. A countywide budget for planning and implementation has been developed, and costs will be allocated on a per capita basis.

Existing education and public information programs in the county are quite extensive, but are provided by a number of agencies and organizations on an individual, independent basis. Public outreach, support for and promotion of the following activities have taken place: Earthday, office paper recycling, telephone book recycling, recycling hotline, Christmas tree recycling, toilet recycling, backyard composting, and recycling centers. The County's proposal to provide coordinated and comprehensive education and public information through a massive media campaign will serve as the basis from which all other recycling promotions will stem.

Disposal Facility Capacity Component

The Disposal Facility Capacity Component describes existing solid waste landfills and transformation facilities, and current capacity and projected needs. Each city and county must identify the amount of disposal facility capacity needed to accommodate waste generated within the jurisdiction over the next fifteen years. This component is required to ensure that there is adequate landfill capacity for disposing of solid waste that cannot be diverted.

Six landfills serve the jurisdictions in Santa Barbara County, as well as a seventh serving Vandenberg Air Force Base. The City of Santa Maria owns and operates its own landfill, the Santa Maria Landfill, which is scheduled for closure in 2001.

Funding Component

The Funding Component is a critical part of the SRRE, as it identifies the costs and sources of revenue for planned diversion programs. The component must demonstrate that sufficient funds and resources are available or can be allocated for program planning and implementation. Each jurisdiction is required to determine operating costs for existing and projected programs, and primary and contingency revenues sources to fund the programs.

Local jurisdictions must consider and decide upon both traditional methods of funding waste management systems (tipping fees, property taxes, and user fees) and alternative, creative funding mechanisms (e.g. county service area assessments, JPAs, developer fees, general obligation and revenue bonds, and economic incentive programs).

The City's Funding Component includes costs for programs to be implemented in the short-term planning period. Costs of implementation include program planning and development, implementation, and evaluation and monitoring. SRRE programs in Santa Maria will be funded through tipping fees, franchise fee revenue, rental income on unused portion of the landfill, and revenue derived from trash collection service. With respect to the county's participation in regional programs, the County of Santa Barbara is considering project financing as well as traditional system financing, in particular for the proposed major facilities.

Integration Component

The purpose of the Integration Component is to demonstrate that the source reduction, recycling and composting programs selected by each jurisdiction will achieve, in combination, the mandated 25 and 50 percent diversion rates. Additionally, the component illustrates how these programs work in concert with one another to comply with the hierarchy of integrated waste management of source reduction, recycling and composting, and environmentally safe landfilling and transformation. This component also includes a schedule for implementation of all programs and tasks selected to meet the specified objectives set forth in the SRRE.

The City of Santa Maria expects that the programs described in the SRRE will together achieve 32.4% diversion by 1995 and 58.7% diversion by the year 2000.

SRRE METHODOLOGY

AB 939 requires waste to be analyzed according to the types and generators of waste present in each jurisdiction to determine waste disposed and diverted, and consequently, generated, in order to plan SRRE programs and schedule implementation to meet the 25% and 50% diversion mandates. To effectively determine that information, data was collected in the Waste Generation Study on the quantity and composition of waste disposed of and waste diverted from disposal.

As part of the Waste Generation Study, a waste disposal characterization was conducted to determine the composition of residential and commercial waste disposed of by the county unincorporated, each individual city and Vandenberg AFB. Random field samplings of waste taken from refuse collection vehicles were conducted at five landfills over a period of 10 days. Industrial waste composition was determined through site visits of randomly selected generators and field analysis of disposal containers. Residential, commercial and industrial disposed wastes were analyzed in accordance with the waste types specified on AB 939.

The Waste Generation Study also contained a waste diversion characterization to assess diversion activities within the county unincorporated, cities and Vandenberg AFB. Mail and telephone surveys were employed to identify and measure to the extent feasible existing source reduction, recycling and composting activities. This data enabled the City to determine the degree and kind of additional diversion activity needed to meet the 25 and 50 percent diversion requirements.

SUMMARY

It is widely recognized that significant changes are taking place in the field of waste management. The California Integrated Waste Management Act of 1989, AB 939, compels local government to meet the solid waste challenges of the 1990s through *integrated* management, sound planning and creative problem-solving. No longer simply trash collection and landfills operations, the business of handling refuse has been transformed into a technological and environmental statement of the direction in which the State of California is headed in the 21st century.

On the basis of scientific data and forecasts on the kinds and amounts of waste generated and disposed of by Santa Maria residents, the City's Source Reduction and Recycling Element represents a clearer picture than previously available of citizen patterns and behaviors regarding waste generation. As the City better understands those behaviors, we are able to more effectively address the problems of and solutions for waste management. Rather than being an environmentally sensitive thing to do, source reduction and recycling must become a way of life. What that means is that people's patterns of waste generation and disposal will change. And when behaviors change, elected officials see the shaping of public policy at work in our communities - in our homes, places of business, and industries.

AB 939 was designed to facilitate a change in people's waste habits. The legislation affords local government flexibility in developing effective waste management programs that meet the needs and conditions of individual jurisdictions, within the framework of mandated diversion goals and respectful of an established integrated waste management hierarchy. The City of Santa Maria recognizes that an aggressive waste management program is necessary to avert a solid waste crisis in California, and is fully supportive of and committed to the diversion goals mandated in State law. The goals and objectives embodied in this document manifest that commitment, and set the course for the City of Santa Maria to protect and preserve the environment, stimulate recycling markets, and conserve diminishing landfill space.

CHAPTER 1

GOALS AND OBJECTIVES

The City of Santa Maria's Source Reduction and Recycling Element begins with an overview of the goals and objectives embraced by the City for each of the major component programs. Specific objectives have been developed for these goals that are measurable, time-specific and quantified, wherever feasible and appropriate. The Goals and Objectives chapter lists the short- and medium-term objectives contained and detailed within each of the components of the SRRE.

Table 1.1, on page 1-6, summarizes the time frame and estimated diversion rates associated with component programs.

1.1 Source Reduction Component

The goal of the source reduction program planned by the City of Santa Maria is to change the product design and packaging practices of manufacturers and buying habits and waste generation patterns of consumers. Specifically, the City aims to accomplish the following goals and objectives to stimulate source reduction behavior and practices:

Targeting product and packaging designers and manufacturers, the City source reduction program seeks to bring about:

- use of less materials in the production process
- production of fewer nonrecyclable products or packages
- production of alternatives that are reusable, refillable, repairable, or have longer useful lifespans in place of disposable goods production
- reduced packaging production
- increased efficient use of materials in production operations, processes, and equipment
- increased consideration of product lifespan/durability, reusability, and recyclability in product and packaging design criteria
- production of fewer toxic products and/or goods made with toxic constituents

Targeting consumers and generators of waste (individuals, government agencies, commercial sector), the City source reduction program seeks to bring about:

- less use of nonrecyclable products and/or packaging
- use of alternatives that are reusable, refillable, repairable, or have longer useful lifespans in place of disposable goods
- less use of packaging
- less generation of yard waste
- increased participation of backyard composting activities

- increased consideration of product lifespan/durability, reusability, and recyclability as purchasing criteria
- less use of toxic products and/or goods made with toxic constituents

Short- and medium-term objectives associated with these goals are listed below.

1.1.1 Short-Term Objectives

1. By 1995, to reduce waste generation by 3% beyond current levels, through all source reduction activities implemented. The source reduction activities implemented will aim to bring about the desired changes presented on above.
2. By 1993, to have developed and instituted the most efficient and effective methods of quantifying source reduction activities in the City.
3. From the conception of the Source Reduction Program, to work in coordination with other cities, to the extent feasible, on program design, implementation and monitoring.
4. From the conception of the Source Reduction program, to monitor and support state and federal source reduction efforts.

1.1.2 Medium-Term Objectives

1. By the year 2000, to reduce waste by 5% beyond current reduction levels, through all source reduction activities implemented.
2. By 1996, to have evaluated the success of the Source Reduction Program during the short - term period, and redirect efforts accordingly.
3. To continue refining the methods of quantifying source reduction activities in the City.
4. To continue to work in coordination with other cities, to the extent feasible, on program design, implementation and monitoring.
5. To continue to monitor and support state and federal source reduction activities.

1.2 Recycling Component

A goal inherent to the Recycling Component of the City of Santa Maria is to develop a truly integrated recycling system built upon the strengths of existing programs while adding new ones to complement the current recycling and solid waste management infrastructure. Santa Barbara County is planning a regional recycling and composting facility, referred to as an Integrated Diversion Facility, to serve the South County. The facility will provide mixed waste processing capabilities and composting capability for yard waste, sewage sludge and mixed organic material.

1.2.1 Short- and Medium-Term Objectives (1991-2000)

1. To divert at least 20 percent of Santa Maria's wastestream through recycling in order to meet the 25 percent diversion mandate by 1995.
2. To expand Santa Maria's existing recycling programs to achieve the short-term planning period diversion goals.
3. To facilitate regional (City of Santa Maria, Guadalupe, Solvang, and surrounding unincorporated County) cooperation in the development of intermediate and mixed waste processing capabilities in the Santa Maria area.

A requirement of this component is to establish market development objectives as part of an effort to secure and develop markets for recycled products and goods.

1.2.2 Market Development Objectives

1. To increase the market for recyclables, including mulch, through City purchase and procurement practices and policies.
2. To work with local manufacturing and agricultural industries to identify opportunities to increase the use of materials recovered in local recycling programs in their production processes.
3. To support legislative efforts the state and federal level to require comprehensive recyclable content in manufactured goods.
4. To support a coordinated Countywide educational effort to encourage businesses to purchase goods made with recycled content.
5. To consider applying to the CIWMB for designation as a State Recycling Market Development Zone.

1.3 Composting Component

As no municipal or private composting activities are currently underway in the City of Santa Maria, a primary goal of the City is to coordinate with the county and adjacent cities in the design and siting of a regional composting facility, in conjunction with the mixed waste processing facility to be developed in the short-term.

The City of Santa Maria has adopted the following short- and medium-term objectives:

1.3.1 Short-Term Objectives

1. To participate in the cooperative regional development of a composting facility to be fully operational in the medium-term planning period.
2. To develop municipal composting capabilities in a cost effective manner by integrating composting with other recycling collection and processing activities in the City.

1.3.2 Medium-Term Objectives

1. To divert at least 50 percent of all yard waste from disposal through composting activities by January 1997.
2. To target organic materials, such as food waste, other paper and other organics, for composting in the residential and commercial wastestreams to help achieve the State mandated 50 percent diversion goal.

A requirement of this component is to establish market development objectives as part of an effort to secure and develop markets for composted products and goods.

1.3.3 Market Development Objectives

1. To develop and expand local public and private sector markets for compost products produced through municipal composting programs.
2. To facilitate the use of locally produced compost and mulch products by municipal agencies in public parks, civic centers and other facilities.
3. To provide a range of compost and mulch products specifically produced to meet market needs.
4. To develop community education programs emphasizing the beneficial uses of compost and mulch products.

1.4 Special Waste Component

The Special Waste Component addresses goals and objectives adopted to deal with three kinds of waste requiring unique disposal or to protect public health: tires, sewage sludge and medical waste.

The following objectives have been adopted by the City of Santa Maria for the management of these special wastes. The County of Santa Barbara is responsible for or coordinates management of these special wastes, and as such, the state objectives reflect those of the County as well.

1.4.1 Short- and Medium-Term Objectives

Tires

1. Continue handling of tires through commercial businesses until such time that feasible technological alternatives are developed for recycling and/or reuse.

Sewage Sludge

1. Continue handling sewage sludge using current methods which comply with applicable regulations until feasible alternative methods for recycling, reuse, reduction and/or composting are developed.
2. Continue monitoring and evaluating technological development for methods to recycle, reuse, and/or compost sewage sludge, and if possible, implement such methods.

Medical Waste

1. Continue landfill check and treatment programs to ensure that all medical waste loads, including small quantity amounts, have been properly treated to render the medical waste a solid waste.
2. Support the County of Santa Barbara implementation of the Small Quantity Generator (SQG) program.

1.5 Education and Public Information Component

As an active participant in a countywide umbrella campaign being launched by the County of Santa Barbara, the City of Santa Maria has embraced a number of goals to be achieved by its education and public information program. The education campaign, resting on a multi-faceted, synergistic approach, will enable cities and the county to generate significant public awareness using one promotional image with all activities designed to support each other.

1.5.1 Short- and Medium-Term Objectives

1. Increase the awareness of and participation in recycling by City residents, which will result in an increase in the number of people recycling in the City.
2. Increase the number of commodities residents recycle, as well as the overall level of commodities recycled, to result in an overall level of recycling in the City.
3. Increase the awareness of and participation in source reduction and composting methods among City residents, which will result in an increase in the number of people practicing source reduction methods in the City.
4. Coordinate with and actively participate in the Countywide Education and Public Information Campaign.

Table 1.1 summarizes the percentages of waste to be diverted through each of the program components - Source Reduction, Recycling, and Composting. Estimated diversion to be achieved through each selected program is provided in the respective component chapters, as well as in Table 10.1 in Chapter 10, Integration.

Table 1.1 SRRE Component Programs Diversion Rates and Time Frame		
COMPONENT PROGRAM	1995	2000
Source Reduction	3.0%	5.0%
Recycling	29.4%	30.7%
Composting	0.0%	23.0%
TOTALS	32.4%	58.7%

CHAPTER 2

SOLID WASTE GENERATION ANALYSIS

The Source Reduction and Recycling Element must include a Solid Waste Generation Analysis (SWGA) based on the information developed in the Solid Waste Generation Study (SWGS). The SWGA includes lists of the materials currently disposed, materials currently diverted from disposal, materials which could potentially be diverted from disposal, and materials which are disposed of which *cannot* be diverted from disposal by selected solid waste diversion programs.

2.1 MATERIALS CURRENTLY DISPOSED AND DIVERTED

The following table summarizes the quantities of materials currently diverted from disposal, and the materials identified as currently disposed in the City of Santa Maria according to the Solid Waste Generation Study:

Solid Waste Category	Quantity Disposed (tpy)	Quantity Diverted (tpy)
Paper	61,364	1,351
Plastics	14,671	26
Glass	4,108	574
Metals	8,606	6,448
Yard Waste	24,309	2,551
Other Organics	30,277	734
Other Wastes	7,024	20
Special Wastes	0	0
TOTAL	150,360 tpy	11,703 tpy

2.2 MATERIALS CURRENTLY DISPOSED WITH DIVERSION POTENTIAL

The following waste types identified in the SWGS could potentially be diverted through source reduction, recycling and composting programs in this plan. The following list does not mean that 100 percent of these materials are recoverable under the programs selected for implementation. Factors such as contamination, physical condition, and market availability may limit the quantity of certain materials that can be practically recovered. The following materials can potentially be diverted through new or existing solid waste diversion programs:

1. Corrugated Cardboard
2. Newspaper
3. High Grade Paper
4. Mixed Paper
5. HDPE
6. PETE
7. Film Plastic
8. Other Plastics
9. Refillable Glass Containers
10. CA Redemption Glass
11. Other Recyclable Glass
12. Aluminum Cans
13. Ferrous & Tin Cans
14. Bi-metal Cans
15. Other Metals
16. Non-Ferrous & Aluminum Scrap
17. White Goods
18. Yard Waste
19. Food Waste
20. Tires and Rubber
21. Wood Waste
22. Textiles and Leather
23. Manure
24. Other Organics
25. Inert Solids
26. Household HazardousWastes

These waste types can be diverted through existing programs such as thrift store collection and other source reduction activities, curbside collection, drop-off centers, commercial/industrial source separated collection, mulching, and periodic household hazardous waste collection events. In addition, these materials can potentially be diverted by new programs selected in this plan including: backyard composting, expanded source separated collection, mixed waste processing, composting, and a permanent household hazardous waste collection facility.

2.3 MATERIALS WHICH CANNOT BE DIVERTED FROM DISPOSAL

The following materials cannot be readily diverted from disposal through the programs selected for implementation in this plan:

1. Other Paper
2. Other Plastic
3. Non-Recyclable Glass

Other paper consists of low paper grades and food contaminated paper. This material cannot be economically collected and recycled at this time. However, this material could potentially be diverted through a mixed organic waste composting system. Although it is not recommended for implementation in the short-term planning period, a mixed organic waste composting system could divert other paper, mixed paper, food waste, some textiles as well as other miscellaneous organic materials from disposal. This alternative will be considered for implementation in the medium-term planning period (1995-2000) if it is necessary to meet the AB 939 mandates.

Other plastic consists of materials such as plastic packaging and durable plastic products. These materials have little or no market value and currently cannot be collected or processed in a cost-effective manner. As plastics recycling methods and technologies advance, there may be more hope for recovering these materials in the future. Although source reduction education programs specifically targeting these materials are recommended in this plan, it is expected that these materials will continue to be generated in significant quantities.

Non-recyclable glass includes light bulbs, mirrors, pyrex, glassware, auto glass, and other similar materials. These materials are generally not considered recyclable and are not specifically targeted by any programs considered in this plan. In the medium-term plan update (1995) the City should consider the feasibility of technologies such as "glassphalt," in which glass is mixed with paving materials to produce roadbase. If feasible, this approach would enable the City to use otherwise unmarketable glass in the production of useful end-products.

CHAPTER 3

SOURCE REDUCTION COMPONENT

3.0.1 INTRODUCTION

This Source Reduction Component establishes objectives for the source reduction program, describes existing activities, evaluates source reduction alternatives, recommends implementation of selected alternatives, and establishes a ten-year program implementation schedule. The component also identifies implementation responsibility, estimates program costs, lists potential revenue sources and proposes a monitoring and evaluation system.

3.0.2 SUMMARY

The following list summarizes source reduction alternatives to be implemented in the City:

Short-Term Planning Period (1991-1995)

1. Promote **backyard composting** to increase on-site management of food and yard waste.
2. Adopt a **City procurement policy** to encourage increased purchase of products with source reduction attributes (such as copy machines that make two-sided copies).
3. Develop and disseminate **source reduction education**, as part of the campaign discussed in detail in the Education and Public Information Component.
4. Establish an **awards campaign** to recognize significant local reduction achievements.
5. Provide **technical assistance** to government and commercial facilities, helping them establish reduction and recycling programs.
6. Study the feasibility of establishing **variable can rates** for residential generators, once recycling and composting alternatives have been made available and promoted.¹
7. Study the feasibility of establishing a **pilot drop-off area for recoverable (reusable/repairable) items** at the Santa Maria Landfill.
8. Study the feasibility of **reducing or waiving business licenses fees** for "source reduction" businesses.

Medium-Term Planning Period (1996-2000)

1. Ongoing implementation and evaluation of the alternatives implemented in the short-term.
2. Readjustment of diversion goals for source reduction.
3. Continually improving monitoring and quantifying methods.

¹ Garbage collection rates in the City of Santa Maria already reflect a price increase based on the number of cans set out for collection (see section 3.5.1 for details). This rate structure, however, was not specifically designed to encourage source reduction and recycling; thus, the current rate structure may not be achieving the impact that one specifically designed to encourage such behaviors might have. In this SRRE, the term "variable can rate" refers to a rate structure designed with the aim of promoting source reduction and recycling.

3.0.3 BACKGROUND

Source reduction is a key component of the Source Reduction and Recycling Element, not only because it is given top priority in the Integrated Waste Management Hierarchy adopted in AB 939, but also because preventing waste makes better sense than having to manage it. Source reduction results from changes in the manufacturing process of goods, consumer buying habits, and activities by individual consumers, industry, and the public and private sectors that result in a net reduction in the generation of waste.

Source reduction measures aim to minimize the amount of waste being generated in the first place, as opposed to the traditional management approach of designing systems to handle waste *after* it has been generated. Since waste is reduced at the point of generation, in addition to saving landfill space, source reduction can save energy and raw materials, and avoid collection and disposal costs. Thus source reduction is a call to make better use of our natural resources and minimize inefficiencies.

Although source reduction is given legislative priority and preferable to managing wastes, this component may be the hardest to implement for several reasons. The impact of source reduction measures is more difficult to quantify than that of other programs, such as recycling, and there are few source reduction programs already in place in the City. In fact, there is limited practical experience with source reduction measures even on a nationwide basis. In addition, since the products and packaging we buy are tied into a nationwide marketplace, local governments will have to coordinate with state and federal level efforts in order for significant changes to occur and for the local population to have more options available to them.

There are several basic approaches to source reduction evaluated in this component: rate structure modifications, economic incentives, education and technical assistance activities, and regulatory programs.

Rate structure modifications and economic incentives involve fees that reward source reduction and discourage waste production. Rate structure modifications include volume-based rates (residents are charged for waste collection based on the amount of waste set out for collection), or establishing a drop-off area at landfills or transfer facilities where recoverable items can be deposited, perhaps at a reduced fee. Economic incentives include measures such as reduced business license fees for businesses that participate in source reduction activities, or deposits on selected goods or materials.

Educational and technical assistance activities involve efforts to inform individuals, government agencies and the commercial sector of the need to reduce waste generation and to provide assistance that will help them identify areas for change and guide them in implementing changes.

Regulatory programs involve more forceful measures such as proposals to ban products or packaging, or requirements that government agencies include source reduction considerations in their procurement process.

3.1 EXISTING CONDITIONS

Methodology:

The principle method for determining the source reduction activities in each City was a combination mail and phone survey conducted by R.W. Beck and Associates. The survey subjects were selected from local telephone listings, California Integrated Waste Management Board information and word of mouth. Source reduction activities primarily took place at:

- Antique shops
- Compost and yard waste program sites
- Food banks
- Salvage/thrift operations
- Used book and records stores.

Survey respondents were asked to provide the following information:

- Total amount of material collected
- Origin of each material type (by jurisdiction)
- Percentage generated by residential, commercial and industrial sector
- The buyer and seller of the material (in order to prevent double counting).

In addition, County, City and Federal offices, as well as randomly selected residents, businesses and industries were surveyed and asked whether they practiced any of the following:

Residential

1. Bulk purchasing
2. Use of cloth diapers
3. Backyard composting
4. Appliance and furniture repair
5. Donating clothing, food, toys, and used goods to charity

Commercial/Industrial

1. Double sided copying
2. Packaging reuse
3. Use of reusable kitchen ware and utensils
4. Equipment repair
5. Electronic mail.

Findings:

The survey identified a 1.7% source reduction diversion, or 2,732 tons of material, in the City of Santa Maria. Of the materials diverted through source reduction, 1.5% (2,496 residential tons) was from grass clippings being left on lawns, .1% (182 residential tons) from repair of white goods (appliances), and the remainder from reuse of clothing, kitchenware, books, records, toys and furniture. No decrease in scope of existing activities is expected. (For summary tables, see the Waste Generation Study, Table 3-U, page 3-22, and Table 3-AO, page 3-45.)

3.2 SOURCE REDUCTION COMPONENT OBJECTIVES

This Source Reduction Component has specific goals and objectives. The program goals are general changes that the City hopes will occur as a result of the source reduction measures implemented. The component objectives, on the other hand, are more time specific and quantifiable changes that the source reduction program should bring about.

3.2.1 SOURCE REDUCTION PROGRAM FOCUS

Since many different actions lead to source reduction and various groups may be involved, the City has found it easiest to express the purpose of the Source Reduction Program in terms of two main target groups and the changes that the City's program will aim to bring about. These changes, as expressed below, include the source reduction objectives required in the regulations, as well as additional ones. The City recognizes, however, that the table includes objectives, such as influencing product designers, that may be beyond the City's powers to achieve on its own.

Targeted Group: Product/packaging designers and manufacturers

Desired Changes:

- * use of less materials in the production process (e.g. thinner bags)
- * production of fewer nonrecyclable products or packages
- * production of alternatives that are reusable, refillable, repairable, or have longer useful lifespans in place of disposable goods production
- * reduced packaging production
- * increased efficient use of materials in production operations, processes, and equipment
- * increased consideration of product life span/durability, reusability, and recyclability in product and packaging design criteria
- * production of fewer toxic products and/or goods made with toxic constituents

Target Group: Consumers/generators (individuals, government agencies, commercial sector)

Desired Changes:

- * less use of non-recyclable products and/or packaging;
 - * use of alternatives that are reusable, refillable, repairable, or have longer useful lifespans, in place of disposable goods
 - * less use of packaging
 - * less generation of yard waste
 - * increased participation in backyard composting activities
 - * increased consideration of product lifespan/durability, reusability, and recyclability as purchasing criteria
 - * less use of toxic products and/or goods made with toxic constituents
-

3.2.2 SOURCE REDUCTION OBJECTIVES

The objectives of the Source Reduction Program serve as a measuring stick against which to determine if the alternatives implemented have achieved the expected landfill diversion. The sum impact of the source reduction alternatives implemented will allow the City to reach the following objectives:

Short-Term Objectives (1991-1995)

By 1995, to reduce waste generation by a total of 3 percent through all source reduction activities implemented. The source reduction activities implemented will aim to bring about the desired changes presented on the previous page (i.e., use of fewer materials by manufacturers, decreased use of disposables by consumers, etc.).

By 1993, to have developed and instituted the most efficient and effective methods of quantifying source reduction activities in the City.

From the conception of the Source Reduction Program, to work in coordination with other cities, to the extent feasible, on program design, implementation and monitoring.

From the conception of the Source Reduction Program, to monitor and support state and federal source reduction efforts.

Medium-Term Objectives (1996-2000)

By the year 2000, to reduce waste generation by a total of 5 percent through all source reduction activities implemented. The source reduction activities implemented will aim to bring about the desired changes presented on the previous page (i.e., use of fewer materials by manufacturers, decreased use of disposables by consumers, etc.)

By 1996, to have evaluated the success of the Source Reduction Program during the short-term period, and redirect efforts accordingly.

To continue refining the methods of quantifying source reduction activities in the City.

To continue to work in coordination with other cities, to the extent feasible, on program design, implementation and monitoring.

To continue to monitor and support state and federal source reduction efforts.

3.3 TARGETED MATERIALS

The AB 939 Regulations require each jurisdiction to identify specific waste types to be diverted through the source reduction program. Priority materials were identified based on the Solid Waste Generation Study and because these waste types:

- * contribute significantly to the volume of the wastestream;
- * contribute significantly to the weight of the wastestream;
- * have high potential for reuse or extending their useful life spans;
- * are fairly easy to reduce;
- * are significant contributors to solid waste hazards;
- * are made of non-renewable resources;
- * have limited recyclability; and/or
- * can be replaced with comparable, readily available alternatives.

<u>Priority Wastes</u>	<u>Criteria\Rationale</u>	<u>Methods</u>
High Grade Paper	Large percentage of the wastestream. High potential for reduction and effective alternatives available.	* Two-sided copying * Electronic mail * Procurement of recycled/able paper * Use of scrap paper
Mixed Paper	Large percentage of waste stream. Limited recyclability.	* Reduce junk-mail * Minimize packaging * Use of scrap paper
Yard Waste	Large percentage of residential stream. Presents hazard in landfills in contributing to methane gas production. Ease of reduction.	* On-site composting & mulching * Xeriscape practices
Food Waste	Can contaminate other recyclables, such as paper, reducing the potential to recover them down-stream.	* On-site composting & mulching * Food share programs
Plastics	Limited recyclability due to collection costs and markets are not yet firm.	* Use of more reusables
Household Hazardous Wastes	Present potential hazards to the general public, waste handlers, & the environment. Many have alternatives.	* Purchase less-toxic alternatives
Textiles	Limited recovery possible once combined with mixed waste. High potential for reuse through thrift stores.	* Reuse through thrift stores
White Goods	High potential for repair and reuse.	* Thrift store reuse * More repairs/rentals

3.4 EVALUATION OF SOURCE REDUCTION ALTERNATIVES

The alternatives evaluated in this component have been divided into four categories: rate structure modifications, economic incentives, educational and technical assistance, and regulatory programs.

The following section presents a brief description of each alternative to be evaluated, followed by a evaluation of the alternatives based on a set of six criteria and four evaluative discussions. The evaluation is then presented in summary matrices. Alternatives such as product/packaging bans, deposits, refunds and advanced disposal fees have not been evaluated because they are difficult to adopt and administer at the local level and are best done at the state or federal level. The City could, however, monitor and support such efforts at the state and federal levels.

3.4.1 DESCRIPTION OF SOURCE REDUCTION ALTERNATIVES

A. Rate Structure Modifications

1. Residential Variable Can Rates

In this alternative the City would study the feasibility of establishing a variable can rate by which residents would be charged for refuse collection based on the amount of waste put out for collection. This would involve changing the current residential rate structure and basing it on the number or size of cans to which customers subscribe or having residents purchase “official” bags or tags. The refuse hauler would only collect trash in the official bags or bags marked with a tag.

2. Pilot Drop-off Area for Recoverable Items

In this alternative the City would study the feasibility of establishing a pilot drop-off area at the Santa Maria Landfill, where reusable or repairable items would be deposited. Arrangements could be made to have local charitable organization pick-up the items for resale at thrift stores or for repair/remanufacture. If feasible, the tip fee for these items could be reduced to encourage salvage of these items at these sites.

B. Economic Incentives

1. Loans, Loan Guarantees and Grants

In this alternative, the City would make loans and grants available to encourage source reduction related services, such as thrift stores, used book stores, remanufacturing facilities, and rental and repair stores. Grant money could be made available to organizations or businesses proposing programs that would advance source reduction, such as development of educational materials, a waste exchange network, or implementation of model projects, such as retooling a manufacturing process or setting up an office reduction program.

2. Reduced or Waived Business License Fees

In this alternative, the City would study the feasibility of reducing or waiving business license fees for businesses involved in source reduction, such as thrift stores and repair and rental shops. The

primary purpose for implementing this alternative would be that in exchange businesses would maintain better records; this would assist the City in monitoring and quantifying the diversion impact of such operations.

C. Educational and Technical Assistance

1. Backyard Composting

In order to increase backyard composting of yard wastes, food wastes, and other organic materials, the City would establish a program to target residents with information and technical assistance. Backyard composting bins could be provided to residents and the City could simultaneously promote xeriscape practices which reduce yard waste generated through design of landscapes featuring limited foliage and slow growing vegetation.

2. Technical Assistance to Government and Commercial Facilities

[including waste evaluations, procurement & non-procurement programs]

In this alternative, the City would establish a program to assist government and commercial facilities with waste evaluations and implementation of source reduction programs. *Waste evaluations* identify areas where changes can be made to everyday practices to take advantage of source reduction and recycling opportunities. *Procurement policies* can be instituted that favor purchasing of items with source reduction attributes (double-sided copiers, non-toxic cleaners, remanufactured or recyclable items, etc.). *Non-procurement measures* include changes in everyday operations, such as offices switching to use of electronic mail systems and double-sided copy machines, or manufacturing industries retooling their operations to minimize use of raw materials. Commercial sectors with the highest potential for source reduction could be targeted. The City could also establish a Waste Exchange Program so that materials no longer useful to one organization can be used by another.

3. Source Reduction Education

In this alternative, the City would consider use of a wide range of methods to get information out to the general public and consumers in particular -- from flyers, newspaper coverage, and school curricula, to radio and television spots. Specific audiences would have to be clearly identified (students, shoppers, businesses) and the proper messages developed. Information on source reduction might be effectively combined with recycling information.

4. Awards Program

In this alternative, the City would establish an awards program of source reduction achievements and contributions. A wide range of players, from individuals and institutions, to commercial enterprises, could be eligible. Recognition could be given to those providing source reduction services (thrift stores, etc.), as well as those that have incorporated source reduction practices elsewhere, such as offices that have established reduction programs. Decisions would have to be made as to who would be eligible, how the program would be publicized, what the application and selection process would be, and what form the recognition would take.

D. *Regulatory Programs*

1. City Procurement Policy

In this alternative, the City would adopt a procurement policy favoring items with source reduction attributes (double-sided copiers, non-toxic cleaners, etc.). This concept could be extended to procurement of services as well as products; contractors would be required to identify how consistent their internal operations are with respect to source reduction goals and this information could be factored into the selection process.

2. Required Government Reduction Plans & Reports

In this alternative, the City would require government facilities to conduct waste evaluations and develop reduction plans. Monitoring and reporting mechanisms would help ensure implementation and compliance. Successful programs could serve as models for the commercial sector.

3. Required Commercial/Industrial Sector Reduction Plans & Reports

In this alternative, the City would require local commercial operations (businesses and industries) to conduct waste evaluations and develop reduction plans. Monitoring and reporting mechanisms would help ensure implementation and compliance.

4. Land-use Development Permits that Promote Source Reduction

This alternative would tie source reduction requirements into the permitting process for new development or proposed modifications. Where appropriate, applicants would have to demonstrate that they had considered consistency with or incorporation of source reduction practices. For example, residential and institutional developers could be required to consider providing adequate space for backyard composting, and waste generated by demolition projects could be reduced by requiring that renovation of old structures be considered.

3.4.2 DEFINITION OF EVALUATIVE CRITERIA AND DISCUSSION TOPICS

This section defines the six criteria and four evaluative discussions that will be used to evaluate the source reduction alternatives being considered by the City. The regulations pursuant to AB 939 require that six criteria be used to evaluate source reduction alternatives (#1-#6 below) and that there be discussion of four issues (#7-#10 below).

EVALUATIVE CRITERIA:

1. **Reduction Effectiveness:** The effectiveness of the alternative in reducing either solid waste volume, weight, percentage in weight or its volumetric equivalent.
2. **Potential Hazards:** The alternative's potential for environmental or human health/safety impacts.
3. **Ability to Accommodate Changing Economic, Technological, and Social Conditions:** How the alternative holds up against and accommodate changes in economic, technological and social conditions, such as having a flexible technology that can adapt to changing market needs.
4. **Consequences on Wastestream:** How implementation of the alternative will impact the wastestream, including the types of waste that would be reduced in the stream, as well as the alternative's potential to result in negative consequences, such as shifting the solid waste generation from one type of solid waste to another.
5. **Ease of Implementation:** The time required to implement the alternative.
6. **Facility Needs:** The need for new facilities or facility expansion to implement the alternative. For example, an alternative that could make use of existing equipment and systems would have fewer facility needs.

EVALUATIVE DISCUSSIONS:

7. **Consistency with Local Policies, Plans, and Ordinances:** The consistency of the alternative with local policies, plans, and ordinances.
8. **Institutional Barriers to Implementation:** The existence of institutional barriers, such as permitting requirements, to the alternative. This criterion would include consideration of public acceptance, private sector acceptance, impact on jobs, and compatibility with the existing waste management infrastructure.
9. **Costs in Short and Medium-Term:** The cost of implementing the alternative.
10. **End-uses/Market Availability:** The availability of end-uses or markets for the materials/products produced.

3.4.3 EVALUATION OF ALTERNATIVES

Evaluative Criteria

Effectiveness

The impact of the source reduction measures under consideration may be difficult to estimate since there is minimal documented experience with most of these activities. In addition, methods for quantification are still in the experimental stages and it may be difficult to quantify the impact, relate it to the source reduction alternative implemented or distinguish it from the impact of recycling activities.

Variable Can Rates:	Variable can rates have proven effective when the cost to set out additional cans is high enough. In addition, this alternative works best when other reduction, recycling and composting programs are available to customers (e.g., backyard composting, curbside recycling) and they are made aware of those options. If diversion rates increase, it may be difficult to determine how much is due to source reduction (i.e., backyard composting, reuse) as opposed to increased recycling of materials.
Drop-off for Recoverable Items:	Establishing a separate area for recoverable items has proven effective in other areas. Arranging for a local charitable organization to take the items and/or reducing the tip fee for such items will increase chances for success. ²
Loans, Loan Guarantees & Grants:	Effectiveness will vary since funds can be made available for a range of things, from purchase of a two-sided copy machine to establishment of a waste exchange program or development of education materials. Actual diversion resulting from this alternative will be difficult to quantify.
Reduced Business License Fees:	Effectiveness may be limited unless financial incentive is significant and if the number of eligible businesses is low. Impact on wastestream will vary since a variety of businesses, from thrift stores to repair shops, could be influenced. Actual diversion resulting from this alternative will be difficult to quantify.
Backyard Composting:	Effectiveness will depend on the participation rate resulting from the number of homes or facilities involved, the level of promotion done and the influence of financial incentives. Approximately .5-1.5% diversion is possible.
Technical Assistance:	Effectiveness may vary depending on the number and types of facilities assisted, whether financial incentives are used,

² Due to deficiencies in the Solid Waste Generation Study (SWGS), reusable and repairable items, such as white goods and furniture, do not appear in significant quantities in the SWGS.

the number that choose to implement changes, as well as the type of changes made (procurement, non-procurement, etc.).

Source Reduction Education:	Effectiveness will vary depending on how ambitious a program is launched and the impact is likely to be most noted in the medium term. Actual diversion resulting from this alternative will be difficult to quantify.
Awards Program:	Effectiveness will depend on how the program is designed, who is eligible, how well it is advertised and how much response it receives. Actual diversion resulting from this alternative will be difficult to quantify.
Procurement Policy:	Effectiveness could be significant since government procures a large amount of products and services. May also bring about positive changes in manufacturers and suppliers.
Required Government Plans:	Effectiveness could be significant since procurement and non-procurement changes could impact a wide range of waste generation practices. May also bring about positive changes in manufacturers and suppliers.
Required Comm./Indus. Plans:	Effectiveness could be significant since procurement and non-procurement changes could impact a wide range of waste generation practices. May also bring about positive changes in manufacturers and suppliers.
Land Use Policies:	Effectiveness may be minimal since it will be dependent on how well the required consideration of source reduction options is enforced and how many projects will be influenced.

Hazards

Variable Can Rates:	Could result in some illegal dumping or burning of waste to avoid paying increased fees.
Drop-off for Recoverable Items:	Hazards may be associated with site if drop-off area is insufficiently monitored and maintained.
Loans, Loan Guarantees & Grants:	None identified.
Reduced Business License Fees:	None identified.
Backyard Composting:	Hazards might include odors and attraction of flies and rodents if backyard composting is improperly done.
Technical Assistance:	None identified.
Source Reduction Education:	None identified.
Awards Program:	None identified.
Procurement Policy:	None identified.

Required Government Plans:	None identified.
Required Comm./Indus. Plans:	None identified.
Land Use Policies:	None identified.

Ability To Accommodate Change

Variable Can Rates:	Can be designed to fit existing economic, technological and social situations and can be modified to meet changes in any of these areas.
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Drop-off for Recoverable Items:	Same as previous alternative.
Loans, Loan Guarantees & Grants:	Same as previous alternative.
Reduced Business License Fees:	Same as previous alternative.

Backyard Composting:	This program involves mostly education and little or no capital investment. It is flexible and can be adapted to fit economic, technological and social changes. For example, educational materials can be updated and/or program reevaluated after pilot stage.
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Technical Assistance:	This alternative involves mostly providing information and potentially some staff time for site visits. It is flexible and can be adapted to fit economic, technological and social changes.
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Source Reduction Education:	This alternative involves mostly development and distribution of information and educational materials. Messages and methods of distribution can be adapted to fit economic, technological and social changes.
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Awards Program:	Can be designed to fit existing economic, technological and social situations and can be modified to meet changes in any of these areas.
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Procurement Policy:	Same as previous alternative.
Required Government Plans:	Same as previous alternative.
Required Comm./Indus. Plans:	Same as previous alternative.
Land Use Policies:	Same as previous alternative.

Consequences on Wastestream

Variable Can Rates:	Reduction of disposable products and packaging, due to increased procurement of items with minimal packaging, and more recyclable and compostable packaging. Reduction of food waste, yard wastes and other organics due to home composting. Reduction in furniture, textiles, appliances, etc. due to increased thrift store donations. May result in
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	increased compaction of waste with trash compactors, which would decrease the volume of material set out for collection, but the weight landfilled would remain the same.
Drop-off for Recoverable Items:	Reduced disposal of recoverable items, such as mattresses, furniture, white goods, and appliances.
Loans, Loan Guarantees & Grants:	Will vary depending upon the type of source reduction activity and/or business assisted. May be instances where support of one business or activity might shift waste generation from one type to another.
Reduced Business License Fees:	Will vary depending upon the type of business assisted. May be instances where support of one business might shift waste generation from one type to another.
Backyard Composting:	Likely to result in a decrease in food wastes, yard wastes, and other organic materials from the residential stream. May bring similar reduction in commercial stream if commercial and government facilities are targeted by the program.
Technical Assistance:	Will vary depending on the types of businesses assisted, how many implement programs, and exactly what source reduction actions are taken.
Source Reduction Education:	Will vary depending on what entities become interested in receiving recognition, and what types of source reduction programs they implement.
Awards Program:	Will vary depending on what entities become interested in receiving recognition, and what types of source reduction programs they implement.
Procurement Policy:	Could have a significant impact in source reducing key materials purchased by the public sector.
Required Government Plans:	Could have a significant impact in reducing materials generated by the public sector, such as office paper.
Required Comm./Indus. Plans:	Impact could be significant in reducing main materials generated by the commercial sector.
Land Use Policies:	Reduction in demolition and construction debris could be achieved, but would be limited by the number of projects impacted and how seriously the requirement is taken.

Time Frame for Implementation

Variable Can Rates:	Can be adopted in the short or medium term, although it is preferable that it be instituted <i>after</i> residents have been made aware of how to reduce their wastestream and alternatives are available to them, such as curbside or backyard composting bins.
Drop-off for Recoverable Items:	Can be implemented in the short or medium term once site(s) have been evaluated and staff has been assigned to handle administrative needs.
Loans, Loan Guarantees & Grants:	Could be implemented in short or medium term once funds are made available, administrative details have been handled, and staff needs have been addressed.
Reduced Business License Fees:	Could be implemented in short or medium term once administrative details have been handled, and staff needs have been addressed.
Backyard Composting:	Can be implemented in the short or medium term once funding has been obtained, staff needs have been addressed, and educational materials have been developed.
Technical Assistance:	Could be implemented in the short or medium term, once funding has been obtained, staff needs have been addressed, information materials have been prepared, and facilities have been targeted.
Source Reduction Education:	Could be implemented in the short or medium term, once funding has been secured, staff needs have been addressed, educational and informational materials have been designed and produced, and dissemination method has been determined.
Awards Program:	Could be developed in the short or medium term, once funding has been obtained, staff needs have been addressed, the eligibility and selection process has been developed, and the form of recognition has been defined.
Procurement Policy:	Could be implemented in the short or medium term, once staff has been assigned to draft an ordinance, staff needs have been addressed and administrative details have been handled.
Required Government Plans:	Could be implemented in the short or medium term, once funding has been obtained and staff needs have been addressed.

Required Comm./Indus. Plans:	Could be implemented in the short or medium term, once funding has been obtained and staff needs have been addressed.
Land Use Policies:	Could be implemented in the short or medium term, once staff has been assigned and administrative details have been handled.

Need For Facilities

Variable Can Rates:	May require facility space for storing and distributing cans of various sizes, or a location from which to sell special bags, stickers or tags; existing facilities could probably be used for these purposes. This alternative would be more effective if composting and recycling programs were on line and those programs are likely to require facilities.
Drop-off for Recoverable Items:	May require development of special tipping areas at existing transfer stations or landfills for recoverable items.
Loans, Loan Guarantees & Grants:	No new facility needs.
Reduced Business License Fees:	No new facility needs.
Backyard Composting:	May require storage area if bins are to be purchased for distribution to residents.
Technical Assistance:	No new facility needs.
Source Reduction Education:	No new facility needs.
Awards Program:	No new facility needs.
Procurement Policy:	No new facility needs.
Required Government Plans:	No new facility needs.
Required Comm./Indus. Plans:	No new facility needs.
Land Use Policies:	No new facility needs.

Evaluative Discussions

Consistency with Local Plans, Policies and Ordinances

Consistency with local plans, policies and ordinances varies among the source reduction alternatives. Educational and technical assistance alternatives seem to be the most consistent, while rate structure modifications, economic incentives, and some of the regulatory alternatives may require adjustments.

All of the following source reduction alternatives appear to be consistent with current City plans, policies and ordinances: **technical assistance to facilities, providing loans, loan guarantees or grants, conducting source reduction education, and development of an awards program.**

Implementing a **variable can rate** appears to be consistent with local plans, policies and ordinances, but would require approval from the City Council.

Establishing a **drop-off area for recoverable items** is consistent with local plans, policies and ordinances. There is currently some salvaging of reusable items at the County Transfer Station and tip fees are reduced for clean loads of compostable or recyclable materials. The City would implement this alternative at the Santa Maria Landfill with approval from the City Council if the tip fee were to be reduced.

The **government procurement policy** appears to be consistent with local plans, policies and ordinances but would require adoption of a resolution by the City Council.

Promotion of **backyard composting** would require revision of existing ordinances (Title 8, Chapter 11 of the Santa Maria Municipal Code), and changes to **business license fees** would require adoption of an ordinance by the City Council.

Requiring government or commercial reduction and recycling plans appears to be consistent with current policies but may face significant resistance. For both government and commercial plans, approval would be needed from the City Council.

Implementing **land use policies** is consistent with local plans, policies and ordinances, but would require involvement of the Community Development and Planning Department to identify needed changes to existing planning, zoning and building codes.

Institutional Barriers

Institutional barriers facing source reduction alternatives vary and are identified below:

Implementing a **variable can rate** would require approval from the City Council.

Establishing a **drop-off area for recoverable items** would be implemented by the City at the Santa Maria Landfill, with approval from the City Council if tip fees were reduced. Also, drop-off locations which generate more than 15 cubic yards of waste per day (i.e., residuals to be landfilled) are required to obtain a solid waste facility permit. Any existing solid waste facilities permit, the Report of Disposal Site Information (RDSI), and current facility CEQA documents must be updated to address changes in collection operations. At the site, the City may face some space, staff and administrative constraints at the site in attempting to set up a special area to handle these items. Enlisting the involvement of a local charitable organization may help facilitate implementation and administration.

A **City procurement policy** would require adoption of a resolution by the City Council. It may be a challenge to get government facilities to change from status quo, and there also may be limitations as to what is available for them to purchase.

Requiring government or commercial/industrial reduction and recycling plans would have to be approved by the City Council. The staff time required to administer, monitor and enforce the programs may be a problem. Also, there might be resistance from the commercial sector and it may be a challenge to get people to change their habits.

Implementing **land use policies** would require involvement of the Community Development and Planning Department to identify needed changes to existing planning, zoning and building codes.

Providing **loans, loan guarantees and grants** may face some barriers because of the need to have funds available and the administrative costs that would be involved. The administrative costs of an **awards program** may also be prohibitive.

Reducing or waiving business license fees may be constrained if the cost of administration is significant or the loss of revenue to the City is too high.

Backyard composting could potentially involve local health officials if sites are poorly managed; program success will depend greatly on how reliably individuals manage their sites.

Technical assistance to government or commercial facilities will face the challenge of getting facilities to change their current procurement and operating practices.

Source reduction education may require approval by School Boards to get new materials in the schools.

Implementation Costs

In general, the main costs associated with the source reduction alternatives under consideration are staff time needed to get implementation underway and to carry out ongoing administration. Given the possible range of staff time and administrative costs which could potentially be allocated to the implementation of these alternatives, it would be unrealistic and highly artificial to assign specific costs for this level of analysis.

Implementation of **variable can rates** would require staff time to design the rate system, make contractual changes, develop the public information approach, handle increased needs in customer service and field inspection, and monitor the results. Outside consulting services may be needed to assist the City in conducting the rate study and in designing a new rate structure. Other costs include production and distribution of public information materials, and possibly purchase and distribution of variably sized cans or bags/tags.

Establishing a **drop-off area for recoverable items** would require staff time to evaluate sites for space and administrative constraints, contact local charitable organizations, get needed approval if fees are to be changed, maintain the area, and monitor the results. Facility improvements may be needed to establish a separate drop-off area.

The costs associated with **loans, loan guarantees and grants** would depend on the level of funds to be made available and source of funds. In addition, there would be costs associated with staff time to administer, monitor and enforce the program.

Reducing or waiving business license fees would involve costs associated with the loss of the license fee revenue and staffing needs to administer, monitor and enforce the program.

Backyard composting would involve costs for staff time and expenses associated with developing and distributing informational materials, handling questions or complaints, and monitoring the program. Additional costs will be incurred if bins are to be provided free or at low cost (they must be bought, stored and distributed) and if any one-on-one or group training sessions will be planned.

Providing **technical assistance** to facilities would involve costs for staff time and expenses associated with drafting, producing and distributing informational materials, holding informational meetings, and monitoring diversion. There would be additional costs if staff helped conduct waste assessments or helped set-up a waste-exchange program.

Source reduction education would involve costs for staff time and expenses associated with drafting, producing and distributing materials, buying ad space, and providing outreach.

The **awards program** would involve costs for staff time and expenses related to development of the program, soliciting and selecting recipients, production of the actual awards, and any publicity used to congratulate award recipients.

A **City procurement policy** would require staff time and have costs associated with developing the policy, getting it adopted, handling administrative details, and preparing reports to monitor progress. Additional funds would be needed if higher prices were to be paid for preferred products.

Required government plans and required commercial plans would involve staff time and costs associated with developing and producing informational materials used to direct waste assessments, assisting with assessments, responding to ongoing questions and informational needs, reviewing reports and monitoring and enforcing compliance.

Land use policies would involve staff time and costs associated with reviewing existing codes, recommending changes, and conducting ongoing administration and monitoring of compliance.

Market Availability

The market availability criterion is not applicable to the source reduction alternatives under consideration. Some source reduction alternatives, such as a procurement policy, could increase procurement of items with recycled content and the amount of recyclable items that might be diverted. It is virtually impossible, however, to assess the impact this would have on the amount of recyclables to be marketed. Some source reduction alternatives may imply the need for outlets that will absorb reusable or repairable items (such as thrift stores or repair stores). This, however, does not lend itself to the type of analysis required to address marketing of recyclable materials.

3.4.4 SUMMARY MATRIX OF EVALUATION OF ALTERNATIVES

The matrices on the following pages provide a summary of the comparative evaluation of source reduction alternatives.

TABLE 3.4.4-A

Source Reduction Evaluation

MATRIX #1

EVALUATION OF SOURCE REDUCTION ALTERNATIVES

Evaluative Criteria						Evaluative Discussions			
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability
s and Rate Structure Modifications									
Proven effective if additional can costs are significant and when accompanied by recycling and reduction programs.	Could result in some illegal dumping.	Can be modified to fit changes in economic, social and technological situations.	May produce volume reduction in a wide variety of wastes.	Can be adopted in short or medium term, preferably after waste reduction alternatives are available.	May need storage facility.	Consistent with local plans and policies. Would require change in franchise agreement.	Will need approval by the City Council or Board of Supervisors.	Primarily staff time to administer change.	Not applicable.
Successful when used with materials that have a high potential for source reduction. Has proven effective elsewhere.	Site maintenance could be a problem (e.g. scavengers, safety)	Can be modified to fit changes in economic, social and technological situations.	Can reduce disposal of targeted items: furniture, white goods.	Can be implemented when site evaluated and administration set-up.	May need special drop-off area.	Consistent with local plans and policies.	City Council or Board of Suprvrs approval needed if rates down for special items. Permits, RDSI, CEQA docs must be updated.	Costs associated with administration and facility improvements.	Not applicable.
Effectiveness will vary depending on programs funded.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Effect will vary on type of activity or business targeted.	Can be implemented once funds are made available and administration is in place.	No new facility needs.	Consistent with local plans and policies.	Will depend on the availability of funds.	Costs will depend on level of funds available for program.	Not applicable.
Effectiveness limited unless incentive is financially significant.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Effect will vary on type of activity or business effected.	Can be implemented when administrative staff is available.	No new facility needs.	Consistent with local plans and policies. Would require ordinance by City Council or Board of Suprvrs.	Administration costs compared to existing fees may be high.	Costs include loss of license revenue and additional administration.	Not applicable.

TABLE 3.4.4-B

Source Reduction Evaluation

MATRIX #2

EVALUATION OF SOURCE REDUCTION ALTERNATIVES

Evaluative Criteria						Evaluative Discussions				
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability	
Educational and Technical Assistance										
Backyard Composting	Effectiveness will depend on participation rates. Pilot rate participation is presently 10%.	Odors and attraction of pests are potential hazards.	Program requires little capital investment, and is very flexible.	Will decrease food wastes, yard wastes and other organics from residential stream.	Can be adopted in short or medium term, once funding and staff needs are met.	May need storage facility.	Consistent with local plans, policies and ordinances.	Involvement of local health officials if sites are poorly managed.	Costs include staff time to develop, promote and administer the program, as well as providing bins to participants.	Not applicable.
Technical Assistance To Facilities	Effectiveness may vary widely depending on number and type of facilities assisted. Good vehicle for tracking data.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Will vary depending on number and types of assisted facilities.	Can be adopted in short or medium term, once funding and staff needs are met and information materials are prepared.	No new facility needs.	Consistent with local plans, policies and ordinances.	Current institutional practices may be barriers.	Costs involve staff time to develop and produce materials, and conduct evaluations.	Not applicable.
Source Reduction Education	Effectiveness will depend on size and scope of program.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Will vary depending on what entities become interested and what programs they develop.	Can be adopted in short or medium term, once funding and staff needs are met and information materials are prepared.	No new facility needs.	Consistent with local plans, policies and ordinances.	None identified.	Costs involve staff time to develop and produce materials, and promote program.	Not applicable.
Awards Program	Effectiveness will depend on design of program.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Will vary depending on what entities become interested and what programs they develop.	Can be adopted in short or medium term, once funding and staff needs are met and eligibility and selection process is determined.	No new facility needs.	Consistent with local plans, policies and ordinances.	Administrative costs may be prohibitive.	Costs include staff time to develop approach and select recipients	Not applicable.

TABLE 3.4.4-C

Source Reduction Evaluation

MATRIX #3

EVALUATION OF SOURCE REDUCTION ALTERNATIVES

<i>Evaluative Criteria</i>						<i>Evaluative Discussions</i>			
Reduction Effectiveness	Potential Hazards	Adaptability	Consequences on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability

Regulatory Alternatives

Procurement Policy	Significant effect because of the large amount of products and services procured by government.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Could have significant impact on materials purchased by public sector.	Can be adopted in short or medium term, once funding and staff needs are met.	May need storage facility.	Consistent with local plans, policies and ordinances.	Present policies of governmental procurement agencies.	Costs include staff time to develop policy and administer program. Costs of preferred products may be higher.	Not applicable.
Required Government Plans	Significant effect. May bring about positive changes in manufacturers and suppliers and assist data collection.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Could have significant impact in reducing materials generated by the public sector.	Can be adopted in short or medium term, once funding and staff needs are met.	No new facility needs.	Consistent with local plans, policies and ordinances.	Present practices of governmental procurement agencies.	Costs involve staff time to develop waste audits, address program and information needs, and to monitor and enforce.	Not applicable.
Required Commercial and Industrial Plans	Significant effect. May bring about positive changes in manufacturers and suppliers and assist data collection.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Could have significant impact in reducing materials generated by the public sector.	Can be adopted in short or medium term, once funding and staff needs are met.	No new facility needs.	Consistent with local plans, policies and ordinances.	Expected resistance from commercial sector.	Costs involve staff time to develop waste audits, address program and information needs, and to monitor and enforce.	Not applicable.
Land Use Policies	Effectiveness may be minimized by number of projects influenced and enforcement difficulties.	None identified.	Can be modified to fit changes in economic, social and technological situations.	Reduction would be limited by the numbers and types of projects effected.	Can be adopted in short or medium term, once funding and staff needs are met.	No new facility needs.	Consistent with local plans, policies and ordinances.	Expected resistance from commercial sector.	Costs include staff time to develop approach and to review development proposals.	Not applicable.

3.5 SELECTION OF SOURCE REDUCTION ALTERNATIVES

Based upon existing conditions, data from the Waste Generation Study, and the evaluation of alternatives in the previous section, the source reduction alternatives listed below were selected for implementation.

Short-Term Planning Period (1991-1995)

1. Promote **backyard composting** to increase on-site management of residential food and yard wastes.
2. Adopt a **City procurement policy** to encourage increased purchase of products with source reduction attributes (such as copy machines that make two-sided copies).
3. Develop and disseminate **source reduction education**, as part of the campaign discussed in detail in the Education and Public Information Component.
4. Establish an **awards campaign** to recognize significant local source reduction achievements.
5. Provide **technical assistance** to government and commercial facilities, helping them establish reduction and recycling programs.
6. Study the feasibility of establishing **variable can rates** for residential generators, once recycling and composting alternatives have been made available and promoted.
7. Study the feasibility of establishing a **pilot drop-off area for recoverable (reusable/repairable) items** at the Santa Maria Landfill.
8. Study the feasibility of **reducing or waiving business licenses fees** for “source reduction” businesses.

Medium-Term Planning Period (1996-2000)

1. Ongoing implementation and evaluation of the alternatives implemented in the short-term.
2. Readjustment of diversion goals for source reduction.
3. Continually improving monitoring and quantification methods.

3.5.1 PROGRAM DESCRIPTION AND RATIONALE FOR SELECTION

The following section describes in more detail the alternatives selected for implementation, provides a rationale for why they were selected, and an estimate of the solid waste diversion anticipated from their implementation. Alternatives not selected for implementation were: loans, loan guarantees and grants; land-use development permits changes; and required government or commercial sector reduction plans. The first two were not selected because their potential to result in diversion seemed minimal and their administrative needs were significant. Requiring reduction plans from government or commercial facilities were not selected because significant resistance would be likely and the administrative needs significant. Instead, the City will first provide technical assistance to encourage voluntary actions, leaving open the possibility to require plans if voluntary involvement proves minimal.

1. Variable Can Rate Study

A variable can rate study has been selected because, if implemented, this alternative would provide an economic incentive for residents to increase their source reduction and recycling efforts and would increase the connection between the amount of waste residents generate and how much they pay for the collection service. Variable can rates work best once residents have options available to them to reduce and recycle their waste, such as backyard composting, yard waste collection and curbside recycling programs. A variable can rate is likely to boost participation in these programs since residents will seek ways to reduce what they put out for collection.

In the City of Santa Maria trash pick-up is done by the City with an automated system. Residences are offered a rate schedule providing for one to nine 90-gallon containers that are picked up once a week. Rates are based on the number of containers and carrying distance. With no carrying distance charges, 1x/week collection costs \$11.90 for one 90-gallon can and \$21.60 for 2 cans.

A study will be done to determine whether the current rate structure provides enough of an incentive for residents to increase their reduction and recycling activities. The study will also evaluate whether residents are aware of how much they pay for trash collection and of the differing service levels to which they can subscribe. If the study reveals that the current system does not provide enough of an incentive, a new rate structure will be designed and/or customer education will be increased so that they are more aware that they can subscribe to fewer cans and use available reduction/recycling programs to decrease their waste generation. This study could also look at the existing commercial rate structure to determine if current commercial rates provide an incentive for commercial generators to reduce their waste generation.

2. Feasibility Study of Pilot Drop-off Area for Recoverable Items

A feasibility study of a pilot drop-off area has been selected because, if implemented, this alternative would provide a financial incentive to recover items that can be reused or remanufactured (such as mattresses, furniture and appliances). In addition, good records could be kept, allowing diversion to be quantified. This could be coordinated with the recommendations in the Recycling and Composting Components that fees be reduced or waived for clean loads of compostable or recyclable materials.

3. Reduced Business License Fees Study

A feasibility study of reducing or waiving business license fees has been selected because in exchange for reducing or waiving these fees, businesses would be asked to keep better records of the materials and tonnages they divert, allowing the City to better quantify its source reduction diversion.

Currently in the City of Santa Maria, the City Finance Department handles business license fees. There are four different rate classifications with rates ranging from \$20-\$250. In studying the feasibility of this alternative, the City will evaluate the current business license fee system and determine how many businesses are potentially eligible for a reduced or waived fee. The City will decide whether to reduce or waive fees based on the number of businesses that would be eligible, and the results of a survey that will indicate whether the financial incentive will be enough for the businesses to agree to keep better records and supply the City with the information.

4. Backyard Composting

Promotion of backyard composting in the City of Santa Maria has been selected for many reasons. Yard wastes represent 35.2% of the City's residential tonnages and food waste account for 8.2% -- the most cost-effective and low-impact way to minimize landfilling of these materials is on-site reduction and composting. There are no collection, processing or facility costs involved, potential hazards are minor, the promotion can be started-up quickly, and it serves to involve residents and educate them about the wastes they generate. This alternative is also consistent with local plans, policies and ordinances and faces no significant institutional barriers. Although increased backyard composting will not eliminate the need for centralized collection and composting of yard wastes, to the extent that yard wastes can be managed on-site, collection and processing costs can be reduced. Backyard composting may also be one of the few source reduction activities that can be quantified by the City and credited toward achieving the mandated diversion rates.

Backyard composting works well in conjunction with other source reduction measures, such as a variable can rate, by providing a way for residents to visibly reduce their wastestream and benefit from any financial incentives offered. The combination of financial incentives, education and technical assistance will be key to the success of backyard composting. A variable can rate will provide a financial incentive for residents to begin backyard composting, and providing informational materials, technical assistance and bins makes participation more appealing and convenient.

In the City of Santa Maria, the backyard composting alternative could be implemented through expansion of a pilot project already underway by the County Solid Waste Management Division. In July 1990, the County Solid Waste Management Division began to provide funding for an intern at the Community Environmental Council (CEC) to assess the feasibility of a full-scale backyard composting program in the South Coast. The pilot program would then serve as a model for planning a program in the North County. The pilot project developed involved four South Coast communities, two neighborhoods in the City of Santa Barbara and two in the unincorporated area. Some free newspaper publicity was used initially to make residents aware of the program, followed in mid-January 1991 by a targeted direct-mail campaign to 4,745 single-family residences. The direct-mail campaign included a brochure describing the pilot and that bins were available at no cost or participants could get information on building their own bins. The brochure also served as a sign-up form, and although a response rate of 5% was anticipated, the actual rate exceeded 12%.

In early March 1991, bins were delivered along with a resource guide providing instructions for use of bins and a list of yard waste reduction strategies (use of mulch, leaving grass on lawns, etc.). Also included was information on workshops to be held at local schools and a number to call to get answers to general questions. The pilot project currently includes 548 residences (approximately 225 in the unincorporated area and 323 in the City of Santa Barbara). About 30 of those in the pilot program chose to build their own bins and the remainder received free bins. Several dozen additional residences targeted by the direct-mail campaign have requested bins but there were no more available so they have received information on building their own. In addition, as a result of the newspaper coverage earlier in the pilot, over 200 residences that were outside of the direct-mail campaign have requested and received information on how to compost and build a bin, or where to purchase one.

Once the surveys have been analyzed, the program will be run by County staff and will expand to target all single-family units in the South Coast area (City of Santa Barbara, City of Carpinteria, South County unincorporated area), the City of Solvang, and North County unincorporated area (Santa Ynez, Santa Maria and Lompoc Valleys). It is estimated that there will be a 10% participation rate. The County might consider expanding the program to target mobile homes and condominiums, since some have expressed interest, and may be working with landscape companies which manage yard waste at large estates.

The program is not currently planned to involve homes in the cities of Guadalupe, Santa Maria, or Lompoc. The County, however, may decide to work with these cities and cover them under the County program. The arrangement might be that these cities provide funding to the County to cover the costs for staff time, promotional and informational materials, and bins associated with their population. In this way, the same information will be used Countywide and these cities will not need to develop their own materials. Another option would be for the cities of Santa Maria, Lompoc and Guadalupe to run their own program but still make use of the materials developed by the County program. These cities could also cover the unincorporated areas near them and request funds from the County to address these areas. The City of Santa Maria will determine whether cooperation with the County program is possible in order to maximize efficiency and regional coordination.

5. Technical Assistance

Providing technical assistance to commercial and industrial facilities will bring about voluntary development of reduction and recycling plans. This alternative has been selected because it can be designed to target the most significant waste generators in the jurisdiction and can bring about reduction of a wide range of waste types. Technical assistance can begin within the first year or so and could be used to develop a good network for monitoring increased reduction activities and quantifying diversion. This voluntary approach was selected over requiring that government or private facilities develop reduction and recycling plans because mandating such plans might face significant resistance and involve higher costs due to monitoring and enforcement needs. The City hopes that with increased education and the potential for businesses to reduce their trash bills, requiring plans will not be necessary. However, if the voluntary approach does not elicit sufficient response and involvement, the City will consider mandating reduction and recycling plans.

Outreach to businesses and institutions will be done as part of the broader Education and Public Information Campaign, which will be spearheaded by County staff with some assistance from City staff. Direct mail and newspaper advertisements will promote reduction and recycling and enlist

interest. Brochures featuring reduction and recycling methods will be developed for four sectors: office-oriented businesses; commercial operations; restaurants, hotels and bars; and industrial and construction operations.

Assistance will also be given through informational open houses for each targeted sector with experts available to answer questions and provide direction for those interested in setting up reduction and recycling programs. Interested parties will learn how to assess their current waste generation practices and make changes to reduce waste, such as increasing two-sided copying, use of scrap paper and electronic mail, and decreasing single-use items. A waste exchange system may be developed to facilitate reuse of materials. More detail on outreach to institutions and businesses is provided in the Education and Public Information Component.

6. Source Reduction Education

This alternative has been selected because source reduction levels will not increase unless waste generators understand the need for source reduction and know what they can do to reduce the waste they generate. By educating consumers and businesses many different material types can be reduced. Providing information and education is consistent with City policies and faces no significant barriers.

Source reduction information will reach the general public, schools, consumers, and businesses and institutions through the umbrella Public Information and Education Campaign spearheaded by the County. The campaign will target these various audiences and disseminate information on source reduction, recycling and composting. More detail can be found in the Education and Public Information Component.

7. Awards Program

An awards program has been selected as a way to increase awareness of source reduction activities in the City and provide an incentive for individuals and businesses to become involved. Such a awards program will be publicized in the media and members of the general public, schools, and the commercial or industrial sector can apply by providing information on their source reduction activities. In this way, residents and businesses can be rewarded for their source reduction efforts, awareness of source reduction can be increased, and quantifiable data on source reduction activities can be gathered and counted toward the AB 939 mandates. The awards will be coordinated through the Education and Public Information Campaign led by County staff.

8. City Procurement Policy

Adoption of a City procurement policy encouraging reduction has been selected because government facilities are large volume purchasers and as a result significant reduction of the waste they generate can be achieved. The City can serve as a model for businesses and suppliers may be motivated to offer more products which reduce waste or have recycled content. This alternative could help significantly reduce materials generated in high volume by the public sector, such as paper and packaging, and there are no associated hazards or facility needs.

The City currently buys paper with recycled content, but there is no official policy encouraging or favoring procurement of products with recycled content or which are recyclable or help reduce

waste or toxicity. On November 28, 1989, the Board of Supervisors of the County of Santa Barbara adopted Resolution No. 89-684 to stimulate procurement of paper with recycled content. The resolution sets a 5% price preference, directing the County Purchasing agent to purchase paper with recycled content even if the price is up to 5% higher than the lowest bid quoted by suppliers of non-recycled paper. The resolution also called for a review of purchasing specifications to remove any unfair discrimination against the use of recycled materials, and the Purchasing Agent was directed to “investigate opportunities to buy products other than paper which contain recycled materials, generate less waste, are less toxic, are longer lasting and are reusable or re-manufacturable.” The County has not yet analyzed whether the policy has resulted in significant change.

The City should develop a procurement policy under the direction of the City Purchasing Division and the City Council, in coordination with other City departments and the County, if appropriate. The City will determine how narrow or broad in scope the policy will be. The policy may simply encourage procurement of products that are long-lasting, reusable, remanufactured, repairable, recyclable, made with recycled content, or non-toxic, or it may be more aggressive and require that specific products be purchased.

Many different materials and products could be addressed, including paper products, plastic products, office equipment, cleaning products, vehicles, white goods, machinery, asphalt, and more. Actions that the City might include are: removing barriers that make it difficult for such products to compete; centralizing purchasing to result in better response from vendors; increasing bulk purchasing and reducing excessive ordering; setting specifications which products must meet (in terms of recycled content, durability, etc.); setting a price preference for buying such products; or establishing a set-aside quota requiring that a certain percentage of a product purchased will meet the specifications developed.

3.5.2 ESTIMATE OF SOLID WASTE DIVERSION

Estimating the diversion that will result from the various source reduction alternatives to be implemented by the City will be challenging and in some cases impossible. Recycling and composting programs divert specific materials which are usually identified and quantified. In contrast, source reduction diversion programs, such as education, do not involve collection and processing of specific quantities of materials. Source reduction can occur at any stage of the life-cycle of a product or package, can be the result of actions taken by anyone from students to office workers, and almost every waste type currently being landfilled could be reduced in some manner or another.

The tables on the following pages outline anticipated diversion estimates for the City’s source reduction program. Table 3.5.2-A provides a summary of how the City will achieve its short and medium-term source reduction objectives, through continuation of existing source reduction activities and implementation of new source reduction alternatives. Table 3.5.2-B estimates future anticipated diversion rates from the continuation of existing source reduction activities; this assumes that the level of activity will remain the same but the amount of waste generated will increase based on the wastestream growth rate provided on page 5-3R of the Solid Waste Generation Study (SWGS). Table 3.5.2-C estimates future diversion rates from a **backyard composting** program in the City.

Table 3.5.2-A

City of Santa Maria Source Reduction Component Program Diversion Summary			
Source Reduction Component Programs	Estimated Diversion Percent 1990	Estimated Diversion Percent 1995	Estimated Diversion Percent 2000
Existing Source Reduction	1.7%	1.6%	1.6%
New Source Reduction Programs			
Backyard Composting	0.0%	0.4%	0.4%
All Other Alternatives*	0.0%	1.0%	3.0%
Currently Quantifiable Source Reduction	1.7%	2.0%	2.0%
Total Source Reduction (Objectives)		3.0%	5.0%
* The City anticipates that the other selected source reduction alternatives (e.g., Technical Assistance, etc.) will combine to make up the difference between currently quantifiable source reduction and the source reduction objectives (3% by 1995, 5% by 2000) adopted by the City in this component. The monitoring and evaluation system established in this component will be refined over time and enable the City to quantify these new activities in the 1995 SRRE Revision.			

Table 3.5.2-B

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS											
<div> <div>COMPONENT (I):</div> <div>City of Santa Maria Source Reduction Component</div> </div> <div> <div>PROGRAM (I):</div> <div>EXISTING SOURCE REDUCTION</div> </div> <div> <div>GENERATOR TYPE (I):</div> <div>Aggregate</div> </div>											
DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTESTREAM DIVERTED											
System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generated (I):	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Disposal (I):	150,360	153,066	155,822	158,626	161,482	164,388	167,347	170,360	173,426	176,548	179,726
Material Type											
Used Clothing	28	29	29	30	30	31	31	32	32	33	33
Furniture	3	3	3	3	3	3	3	3	3	4	4
Appliances	182	185	189	192	195	199	203	206	210	214	218
Kitchen Ware	5	5	5	5	5	5	6	6	6	6	6
Yard Waste (grass clippings)	2,496	2,541	2,587	2,633	2,681	2,729	2,778	2,828	2,879	2,931	2,983
Other (books, records, toys)	17	17	18	18	18	19	19	19	20	20	20
Total Quantity Diverted (tpy)	2,731	2,780	2,830	2,881	2,933	2,986	3,040	3,094	3,150	3,207	3,264
Total Diversion (%)	1.7%	1.7%	1.7%	1.7%	1.7%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
NOTES:											
1 Estimated Waste Disposal Growth Rate: 1.8% : based on Waste Generation Study.											

Table 3.5.2-C

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

COMPONENT:	City of Santa Maria Source Reduction Component
PROGRAM:	BACKYARD COMPOSTING
GENERATOR TYPE:	Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type: From Single Family Homes (3)	Percent of Residential Wastestream	Average Sign-up Rate (4)	Average Continuation Rate (5)	Percent of Waste Composted	Percent Newly Composted	Effective Recovery Rate
Yard Waste	35.2%	10%	75%	75%	80%	1.6%
Food Waste	6.0%	10%	75%	75%	80%	0.3%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generated (1):	162,063	166,601	171,266	176,061	180,991	186,058	191,268	196,624	202,129	207,789	213,607
Total Residential Disposal (1):	36,086	37,096	38,135	39,203	40,301	41,429	42,589	43,781	45,007	46,268	47,563
Number of Targeted Homes (2):	0	0	6,000	11,813	11,813	11,813	11,813	11,813	11,813	11,813	11,813
Number of Participating Homes	0	0	450	886	886	886	886	886	886	886	886
Material Type											
Yard Waste	0	0	307	621	638	656	675	693	713	733	753
Food Waste	0	0	52	106	109	112	115	119	122	125	129
Total Quantity Diverted (tpy)	0	0	359	727	748	768	790	812	835	858	882
Residential Waste Diversion (%)	0.0%	0.0%	0.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
Total Diversion (%)	0.0%	0.0%	0.2%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%

NOTES:

1. Estimated Waste Disposal Growth Rate: 2.8% ; based on Waste Generation Study.
2. Estimated number of single family homes 11,813 ; based on demographic research by California Department of Finance.
3. Assumes 100% of yard waste and 70% food waste is generated by single family homes.
4. Rate of targeted homes that begin program.
5. Rate of homes beginning program that continue to participate through the ten year period.

As Table 3.5.2-A (Source Reduction Component Program Diversion Summary) indicates, the City is not, at this time, attempting to estimate future diversion percentages from the following source reduction alternatives: **technical assistance, City procurement policy, variable can rates³, reduced business fees, and a drop-off area for recoverables.** The table has been provided to indicate that the City will reach its source reduction diversion goals through continuation of existing source reduction activities, implementation of new source reduction programs, and improved monitoring. In the future, as monitoring methods are tested and become refined, the City expects to more specifically quantify diversion from most of the individual source reduction alternatives implemented. Thus, the City would be able to provide short and medium-term estimated anticipated diversion from each source reduction alternative (by waste type, by weight or volume, and by the percentage it will contribute toward meeting the 25 and 50 percent goals). The City does not expect, however, that it will ever be able to quantify specific diversion percentages resulting from **source reduction education or the awards program⁴.**

Table 3.5.2-B (Existing Source Reduction) shows that the current, quantifiable source reduction activities, mostly grass clippings left on lawns and thrift store reuse, are diverting 1.7% and are expected to continue diverting about the same amount through the medium-term; the slight decrease from 1.7% to 1.6% is due to the declining proportion of the residential wastestream relative to other generator types. Implementation of new source reduction alternatives and improved documentation are likely to show increased diversion through these activities. Such increased levels would be attributed to the implementation of new source reduction alternatives and associated monitoring. The continuation of current levels of source reduction diversion, as well as any increase in these levels, will ultimately be jointly documented through the technical assistance or the reduced business license fees alternative (for thrift store diversion) and the backyard composting alternative (for grass clippings left on lawns). Better documentation alone is likely to reveal more thrift store reuse than quantified in the initial SWGS; only 1 out of 5 thrift stores in the City responded to the surveys and the numbers provided were approximations.

Table 3.5.2-C (Backyard Composting) estimates anticipated diversion from backyard composting. The table assumes that ten percent of the targeted single-family homes sign-up for the program and that seventy-five percent of those that start will continue to participate. The table also assumes that seventy-five percent of a households' compostable waste (yard and food wastes) is reduced and that eighty-percent of the materials composted were not being composted prior to the program. The estimated diversion rises from 359 in the first phase, to 882 tons once full-scale, diverting a total of .4% of the total City wastestream.

³ Although some communities, like Seattle, have estimated reduction that has accompanied variable can rates, it would be difficult to attribute how much is due to source reduction activities as opposed to increased recycling.

⁴ The City expects that any reduction occurring from the awards program will be quantified through technical assistance program.

3.5.3 OTHER REQUIRED DISCUSSIONS

The selection of alternatives section of this component is required to include a discussion of end-uses for diverted materials, proposed handling and disposal methods, and facility needs. Only the latter of these, facility needs, is relevant to the source reduction alternatives selected for implementation.

There are minimal facility needs associated with three of the selected source reduction alternatives: variable can rates, reduced disposal fees, and backyard composting. Implementation of variable can rates may require facility space for storing and distributing cans, or a location from which to sell special bags or tags; existing facilities could probably be used for these purposes. A drop-off site for recoverable items may require development of special areas at transfer stations or landfill sites. Backyard composting may require storage of bins if they are to be purchased and distributed to participants.

3.6 PROGRAM IMPLEMENTATION

This section identifies those responsible for implementation of the source reduction alternatives, provides tasks and schedules associated with implementation of the alternatives, as well as program implementation costs and revenue sources.

3.6.1 RESPONSIBLE AGENCIES

The implementation of selected source reduction alternatives will be the responsibility of the Public Works Department. The City expects that a full-time staff person, an Integrated Waste Management Coordinator (IWMC), will be needed to develop, implement and monitor all of the source reduction, recycling and composting activities selected by the City in this SRRE. This staff person should divide his or her time as follows: one-quarter on source reduction program implementation, one-quarter on recycling program implementation, one-quarter on composting program implementation, and one-quarter on monitoring and evaluation of all of the programs implemented. The IWMC will work with existing City staff to implement the SRRE. During the implementation of the SRRE programs, the City may determine that it is necessary to add additional staff in order to implement the required tasks specified in this SRRE.

With respect to source reduction, this staff person will coordinate implementation of source reduction activities, work with staff of other City departments that will be involved in developing and implementing source reduction programs, monitor and evaluate progress toward City source reduction diversion goals, serve as liaison to source reduction staff at the County and other cities, and track state and federal source reduction efforts and activities.

Other parties that will be involved in the implementation of the City's source reduction program include the City Council (to adopt or amend policies and ordinances necessary to implement certain programs); County Public Works Department (to assist the City in developing, implementing and monitoring some programs and to serve as lead of the backyard composting program and source reduction education); the City Purchasing Division (to assist in developing, implementing and monitoring procurement policies); and the City Finance Department (to review and revise business license fees).

3.6.2 PROGRAM IMPLEMENTATION TASKS AND SCHEDULES

1. Variable Can Rates

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	March 1992	The City begins a rate study to determine if a variable can rate system should be designed and implemented.
Task 2	June 1992	If deemed appropriate, design appropriate fee schedule according to recommendations of the rate study. The rate study could be done in coordination with other cities and the County if they are in need of a similar study.
Task 3	August 1992	City presents proposed rate schedule to City Council for approval.

Task 4	September 1992	City produces and distributes materials to inform customers of new rates and increase their awareness of reduction, recycling and composting opportunities available to them.
Task 5	January 1993	Notice goes to customers and program begins.
Task 6	July 1993	Evaluate effectiveness, revise and expand as necessary.
Task 7	Ongoing	Annual monitoring and evaluation.

2. Pilot Drop-off for Recoverable Items

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	January 1992	City evaluates landfill site.
Task 2	March 1992	If site seems feasible, City meets with local charitable organizations.
Task 3	June 1992	If implementation of a pilot is deemed feasible, proposal is presented to City Council.
Task 4	August 1992	Begin pilot drop-off site.

3. Reduced Business License Fees

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	March 1992	City works with the Finance Department to determination how many businesses would be eligible, what the potential loss in revenues to the City would be, and whether businesses will cooperate in providing diversion data based on the financial incentive.
Task 2	August 1992	If implementation is deemed feasible, reduced or waived fees and a system for quantification of diversion by the eligible businesses are adopted.
Task 3	Ongoing	Annual monitoring and evaluation.

4. Backyard Composting

Assuming the City works in conjunction with the County program:

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	March-May 1991	County supported intern conducts workshops for pilot project participants; responds to information requests; mails follow-up surveys; prepares report analyzing pilot project.
Task 2	October 1991	County staff reviews report and refines program expansion plans. City staff assists as needed.
Task 3	December 1991	County staff conducts direct-mail campaign. City staff assists as needed.
Task 4	January 1992	County purchases more bins & distributes to participants. City staff assists as needed.
Task 5	March 1992	County staff conduct workshops for participants. City staff assists as needed.
Task 6	June 1992	County staff mails follow-up survey to all participants, responds to information requests and estimates diversion from program. City staff assists as needed.
Task 7	September 1992	Remainder of City recruited by direct-mail campaign. Additional bins purchased.
Task 8	January 1993	Program expanded to remainder of City. City staff assists as needed.
Task 9	Ongoing	Annual monitoring and evaluation by County and City.

5. Technical Assistance

Technical assistance will be headed by County staff. City staff will work in cooperation with County staff (e.g., participation in business recycling task force; assistance in organizing informational meetings, etc.). The County began preparing brochures for target groups in October 1991. The program will be piloted in the South County, with the formation of a business recycling task force and an open house in March 1992. The first North County open house is planned for July 1992 and North County businesses would also become involved in the business recycling task force. For more detail, refer to the Education and Public Information Component of the County Source Reduction and Recycling Element.

6. Source Reduction Education

Source reduction education will be implemented in coordination with County staff as part of the County Education and Public Information Campaign. City staff will work with County staff (e.g.,

participate in advisory task force of teachers, City and County representatives; assist in promotion of consumer education campaigns, etc.). Source reduction education will be achieved through the County campaign designed as a four-pronged approach including: general public information, school education and outreach, consumer education, and business and institutional education (addressed above in #5).

With respect to general public information, a promotional campaign designed in mid-1991 will be placed in the media (television, print and radio) in late 1991. The campaign and related press conferences will be ongoing through 1995, when its effectiveness will be determined. An expanded and modified campaign will begin in 1996 and be ongoing. With respect to school education, a pilot begun in the Santa Barbara School District in late 1991 will be made available to the all other cities in the County in early 1992. With respect to consumer education, the County began ongoing placement of adds in County newspapers in August 1991, and it will develop an in-store promotion campaign in January 1992. In February 1992, ongoing radio adds will begin. For more detail, refer to the Education and Public Information Component of the County Source Reduction and Recycling Element.

7. Awards Program

The awards program will be implemented in coordination with County staff as part of the business education portion of the County Education and Public Information Campaign. City staff will work in cooperation with County staff as outlined in the Education and Public Information Component of this SRRE. The awards program will begin around November of 1992, after informational open houses have taken place and businesses have had the opportunity to set up source reduction programs. For more detail, refer to the Education and Public Information Component of the County Source Reduction and Recycling Element.

8. Procurement Policy

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	January 1992	City works with the Procurement Division and County Purchasing Agent to evaluate existing policy and draft new policy. Includes removing barriers, setting goals, specifications, and price preferences or set-aside quotas.
Task 2	May 1992	Proposed new policy presented to City Council for adoption.
Task 3	Ongoing	Annual monitoring and evaluation of progress. Maximize potential for quantifying source reduction diversion resulting from procurement changes.

3.6.3 PROGRAM IMPLEMENTATION COSTS

This section provides cost estimates of implementing the source reduction alternatives selected. These estimates are based on a broad range of assumptions and preliminary information and are for planning purposes only. Actual program implementation costs may vary. The implementation costs for the source reduction alternatives to be implemented by the City are largely associated with staff time to develop, implement and monitor the program. As previously stated, the City estimates that its Integrated Waste Management Coordinator (IWMC) will dedicate one-quarter of his or her time to develop and implement the source reduction program; another quarter of the staff position time will be spent on monitoring and evaluating all of the City source reduction, recycling and composting activities. The IWMC will cost approximately \$40 - 50,000 a year including benefits. Thus, City staff time for source reduction implementation and monitoring and evaluation is estimated at approximately \$14,065 a year⁵; this amount of staff time allocated for source reduction will be divided among the various alternatives to be implemented. Any costs in addition to staff time are noted below.

1. Variable Can Rates

This alternative would require staff time to design the rate system, make contractual changes, develop a public information approach, and handle increased needs in customer service and field inspection. Outside consulting services may be needed to assist the City in conducting the rate study and in designing a new rate structure; the most cost-efficient approach might be for the County and all the incorporated cities to join together and hire one consultant to conduct a Countywide rate study. Other costs include production and distribution of customer information materials, and possibly purchase and distribution of cans or bags/tags. City staff time is estimated at \$2,000 a year for this alternative. The City's share of a Countywide rate study conducted by an outside consultant is estimated at \$15,600.⁶ One time printing costs of informational materials, to be mailed with the regular waste collection bill, is estimated at \$1,266.⁷ No cost estimates are made for purchase of new cans, bags or tags since the rate study may not call for this.

2. Pilot Drop-off Area for Recoverable Items

This alternative would require staff time to evaluate the Santa Maria Landfill site for space or administrative constraints, and to meet with local charitable organizations that might be interested in taking the recoverable items. Staff would also have to coordinate monitoring and evaluation of the program. Facility improvements may be needed to establish a separate drop-off area. Possible facility improvement costs and necessary involvement of site staff cannot be estimated at this time. City staff time is estimated at \$2,000 a year for this alternative.

⁵ This number is the sum of \$11,250 (one-quarter of a \$45,000/year salary -- i.e., the amount available for source reduction implementation) and \$2,815 (approximately one-quarter of the \$11,250 designated for monitoring and evaluation of all activities -- i.e., the amount available to monitor and evaluate source reduction).

⁶ This assumes \$100,000 for a Countywide rate study, with each city paying based on population.

⁷ This number is based on an estimate by the California Department of Finance of 12,665 single family housing units in the City of Santa Maria.

3. Reduced or Waived Business License Fees

Costs for this alternative will include staff time to administer, monitor and enforce the program, and loss of license fee revenue. City staff time is estimated at \$2,000 a year for this alternative. Loss of revenue from license fees will depend on the number of eligible businesses that become involved and cannot be estimated at this time.

4. Backyard Composting

City staff time will be dedicated to work with the County Division of Solid Waste, making use of existing educational materials and expertise at the County. City staff time dedicated to this alternative is approximated at \$2,000 a year. The City could choose to provide bins, at a cost of \$30 each, to the 450 or so homes anticipated to sign on to the program in the first phase, for a cost to the City of \$13,500.

5. Technical Assistance to Facilities

The City's technical assistance to commercial/industrial and government facilities will be conducted through the County's Education and Public Information Campaign. The City's cost to benefit from the Business and Institutional portion of the Countywide campaign is considered an Education and Public Information Component cost and is provided in the Education and Public Information Component of this SRRE. The City will dedicate staff time to work with the County program and may compliment it by providing more hands-on technical assistance than the County program will be doing. This includes site-visits to commercial/industrial facilities to help conduct waste assessments and design reduction and recycling programs. In addition, the City may wish to establish a waste-exchange program within the City if the County does not do so. City staff time dedicated to this alternative is estimated at \$2,000 a year.

6. Source Reduction Education

The City's source reduction education will be achieved through the Countywide Education and Public Information Campaign, with City staff dedicated to working with the County. The City's cost for its share of the General Public Information, School Education and Outreach, and Consumer Education aspects of the Countywide campaign is considered an Education and Public Information Component cost and is provided in that component of this SRRE. City staff time dedicated to working in coordination with the County is estimated at \$2,000 a year.

7. Awards Program

The City's awards program will be conducted through the Countywide Education and Public Information Campaign. The City's cost for participating in the Countywide campaign is considered an Education and Public Information Component cost and is provided in that component of this SRRE. City staff time dedicated to working in conjunction with the County on this alternative is included in the hours allocated in alternatives #5 and #6 above.

8. City Procurement Policy

The costs associated with this alternative include staff time to develop the policy, get approval, handle administrative details, and prepare reports monitoring progress. There may be additional costs if higher prices are paid for preferred products, but these costs cannot be estimated at this time. City staff time dedicated to this alternative is approximated at \$2,000.

3.6.4 REVENUE SOURCES

Solid waste management in the City of Santa Maria has traditionally been financed through tip fees at the Santa Maria Landfill. Revenues for the source reduction program will come primarily from refuse collection billing. Only those source reduction alternatives which involve facilities, activities at the Santa Maria Landfill, or planning activities that take place after completion of the City SRRE, will be funded through tipping fees at the Landfill. See the Funding Component of this SRRE for a detailed description of the revenue sources and program funding.

3.7 MONITORING AND EVALUATION OF SOURCE REDUCTION PROGRAMS

This section discusses methods and criteria to be used in monitoring and evaluating the selected alternatives, identifies parties responsible for program monitoring and evaluation, and describes measures to be taken if monitoring reveals that the source reduction diversion objectives for the individual alternatives are not being met. Funding requirements and revenues for monitoring and evaluation are also provided.

3.7.1 METHODOLOGY AND CRITERIA

Monitoring and evaluation of source reduction programs will be done in order to: a) quantify landfill diversion through source reduction; b) identify reduction of waste hazards; and c) monitor the effectiveness of implemented source reduction activities toward achieving the City source reduction goals. Below, an explanation is given for how each source reduction program will be monitored in order to (where possible) quantify diversion; forms, surveys, and direct program monitoring will be the primary methods used. Quantification of waste diverted will be done in volume or weight, and in percent of total waste generated.

Note: Article 6.2, Section 18733.6 (b) (4) of the AB 939 Regulations requires that the City obtain prior written approval of this monitoring and evaluation methodology from the Integrated Waste Management Board.

The Source Reduction Program as a whole will be evaluated based on whether the diversion objectives for the program are met. Criteria for determining the effectiveness of each individual source reduction activity are provided below. The City Public Works Department will prepare **an annual report** which will summarize the status of the City Source Reduction Program, document quantifiable diversion, discuss how the programs have done with respect to their individual criteria, and evaluate whether they will assure compliance with the diversion mandates.

1. Variable Can Rates

In order to determine the effectiveness of the variable can rate, the City Public Works Department will monitor trends in the level of service to which customers subscribe. Historical data on average per household set out rates can also be used to compare to rates after the variable fee has been instituted. Results will be summarized in an annual report. Criteria: Changes in customer subscription rates and reduction in household set outs not attributable to recycling.

2. Pilot Drop-off Area for Recoverable Items

The City Public Works Department will implement this alternative and staff will monitor the program. Records can be kept of materials being diverted through the drop-off area. If a local charitable organization takes much of the material, care will be taken not to double-count diversion since such organizations will probably be asked to provide the City with information on their annual diversion. Criteria: Amount of material salvaged through the drop-off area.

3. Reduced or Waived Business License Fees

This program will be monitored by having eligible businesses fill out a form, developed by the City Public Works Department, that will provide information on the types and quantities of materials diverted. Criteria: Number of businesses that agree to provide good diversion data in exchange for reduction or waiver of the fee.

4. Backyard Composting

Backyard composting will be monitored primarily by the County. A system will be developed to estimate participation in the program. Phone calls, surveys and site visits can be used to determine the quantities of materials being composted and any associated complaints or problems; quantities of grass clippings left on lawns will also be tracked. Consistent records will be kept to allow the City to estimate and document diversion, and to enable the City to address and prevent any problems associated with improper backyard composting operations. Criteria: The number of households participating and the amount of material being composted. Problems encountered due to improper upkeep of operations will also be considered.

5. Technical Assistance

Monitoring technical assistance is addressed in the Public Education and Information Component. Criteria: Number of facilities with reduction programs and amount of diversion through source reduction being documented.

6. Source Reduction Education

Monitoring for source reduction education is addressed in the Public Education and Information Component.

7. Awards Program

Monitoring for an awards program is addressed in the Public Education and Information Component.

8. Procurement Policy

The City procurement policy will be monitored by the City Public Works Department in conjunction with the Procurement Division. An annual report will be prepared summarizing product specifications developed and the quantities of source reduction and recycled content products purchased. Criteria: The number of source reducing and recycled content products purchased as a result of the policy.

3.7.2 MONITORING COSTS AND FUNDING

The annual report summarizing the Source Reduction Program will be prepared by the City Public Works Department. The costs are included in the salary of the City source reduction staff that will be implementing and monitoring the activities. The costs of monitoring and evaluating the program will be funded through refuse collection billing. Refer to the Funding Component for further detail on revenue sources and funding.

3.7.3 MEASURES TO BE TAKEN IN CASE OF SHORTFALL

If the annual report shows that the Source Reduction Program did not meet its diversion objectives, the Public Works Department will identify the activities that have proven less effective, how they can be modified to increase source reduction, how monitoring and diversion quantification can be improved, and whether the program objectives should be adjusted.

CHAPTER 4 RECYCLING COMPONENT

4.0.1 INTRODUCTION

This Recycling Component establishes objectives for the City of Santa Maria, describes existing recycling activities, evaluates recycling alternatives, selects a recycling system, and establishes a ten-year program implementation schedule. This component also identifies implementation responsibilities, estimates program costs, lists potential funding sources and proposes a detailed monitoring and evaluation system. The structure of this component follows the Model Format established by the AB 939 Regulations. The following list summarizes the recycling activities selected for implementation in the City of Santa Maria:

4.0.2 SUMMARY

Short-Term Planning Period (1991-1995)

- Continue and expand existing buyback recycling and curbside recycling programs where possible.
- Expand existing source separated collection of commercial and industrial recyclable materials.
- Implement a mulching program for yard and wood wastes at the Santa Maria Landfill.
- Participate in scoping and developing a mixed waste processing facility serving Santa Maria, Solvang, Guadalupe, and the surrounding Unincorporated areas. This could be an Integrated Diversion Facility (IDF) providing both mixed waste processing and composting capabilities. The facility could be developed through a phased approach, expanding to include composting in the medium-term.
- Participate in local and regional recyclable materials market development activities by applying to be part of a designated market development zone, supporting content legislation, participating in the Southern California Markets Roundtable, implementing recycled content procurement policies, and encouraging private sector activities which expand secondary materials markets.

Medium-Term Planning Period (1996-2000)

- Source separated recycling collection activities, mulching, market development activities and mixed waste processing continue.

4.0.3 BACKGROUND

There has traditionally been a strong interplay between County and City recycling programs along the South Coast and in the Santa Ynez Valley and Santa Maria. To take advantage of this, a regional recycling approach has been selected for implementation in Santa Maria which builds on the strengths of existing programs while adding new ones that can complement the current recycling and solid waste management infrastructure.

Based on the analysis in the SRREs, Santa Barbara County is planning a regional recycling and composting facility that can serve the South County. The facility, referred to as an Integrated Diversion Facility (IDF), will provide processing capabilities for mixed wastes for the recovery of recyclable materials. The facility is referred to as an Integrated Diversion Facility because, in addition to providing processing capabilities for mixed commercial, industrial, and residential solid wastes, the facility also includes composting capability for yard wastes, sewage sludge and mixed organic materials. Two similar facilities will also be needed in Santa Barbara County: one to serve Santa Maria, Solvang, Guadalupe and the County Unincorporated area in the Santa Maria watershed, and a second serving the City of Lompoc, the County unincorporated area in the Lompoc watershed Vandenberg Air Force Base. This type of facility will enable the City of Santa Maria to more effectively manage the solid waste stream, divert natural resources from landfill disposal, and meet the state solid waste diversion mandates.

4.1 EXISTING CONDITIONS

4.1.1 OVERVIEW

The City of Santa Maria's existing recycling programs emphasize buyback operations, Certified Redemption Centers and metals recovery. Of a total of 159,778 tons per year (tpy) generated in Santa Maria, approximately 8469 tpy are diverted which equates to a 5.3 percent diversion rate. The City has also directed the Purchasing Department to procure recycled content paper and to investigate other potential recycled content materials.

4.1.2 DESCRIPTION OF EXISTING RECYCLING ACTIVITIES

Curbside Collection

The City of Santa Maria has recently awarded a curbside collection contract to RALCCO. The contract includes a variety of recycling programs including single-family, multi-family and commercial collections. The term of the contract is for three years.

Buyback Centers

Santa Maria has numerous buyback centers including Health Sanitation, Valley Recycling, Coastal Recycling, and the Vocational Training Center. The emphasis of buyback operations has been on certified redemption containers such as glass, aluminum and PETE plastic containers. Paper collection through buyback has been intermittent because of fluctuating market conditions.

Certified Redemption Centers

There are numerous Certified Redemption Centers currently operating in the City of Santa Maria.

Commercial Source Separated Collection

Commercial Office Paper recovery is provided by the Vocational Training Center and Arata Western.

Existing Market Development Activities

The City of Santa Maria currently purchases paper products with recycled content, but there is no official policy encouraging or favoring procurement of recycled content products. There are currently no specific economic development activities or consumer incentives in place for local secondary materials market development

4.1.3 QUANTITIES DIVERTED BY EXISTING RECYCLING ACTIVITIES

The table on the following page identifies the quantities of materials (by solid waste category and type) diverted in the existing solid waste diversion activities identified in the Solid Waste Generation Study. There are currently no plans to decrease in scope, phase-out, or close any of these existing diversion activities in the short or medium-term planning periods.

TABLE 4.1.3: EXISTING DIVERSION PROGRAMS IN SANTA MARIA

TABLE 3 - AO CITY OF SANTA MARIA (SANTA BARBARA COUNTY)												WASTE DIVERSION ANALYSIS DIVERSION BY WASTE CATEGORY THROUGH EXISTING PROGRAMS							
Diversion Categories		Public Dropoff		Private Buyback & Dropoff		Residential Curbside		Private Commercial Collection		Private Industrial Collection		Special Waste		Source Reduction		Composting		Total Diversion	
		Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent	Tons	Percent
PAPER		---	0.0%	58	*	302	0.2%	991	0.6%	---	0.0%	---	---	---	---	---	---	1361	0.8%
Corrugated		---	---	58	*	---	---	921	0.6%	---	---	---	---	---	---	---	---	978	0.6%
Newspaper		---	---	---	---	302	0.2%	---	---	---	---	---	---	---	---	---	---	302	0.2%
High Grade Ledger		---	---	---	---	---	---	28	*	---	---	---	---	---	---	---	---	28	*
Colored Ledger		---	---	---	---	---	---	42	*	---	---	---	---	---	---	---	---	42	*
Mixed Recyclable		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
PLASTIC		---	---	26	*	---	---	---	---	---	---	---	---	---	---	---	---	26	*
HDPE		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
PET Plastic		---	---	26	*	---	---	---	---	---	---	---	---	---	---	---	---	26	*
Film Plastic		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Other Plastics		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
GLASS		---	0.0%	567	0.3%	7	*	---	0.0%	---	0.0%	---	---	---	---	---	---	574	0.4%
Ca. Redemp. Value		---	---	553	0.3%	5	*	---	---	---	---	---	---	---	---	---	---	558	0.3%
Refillable Containers		---	---	2	*	---	---	---	---	---	---	---	---	---	---	---	---	2	*
Other Glass		---	---	12	*	2	*	---	---	---	---	---	---	---	---	---	---	13	*
METAL		---	0.0%	2768	1.7%	---	0.0%	1792	1.1%	1701	1.0%	---	0.0%	187	0.1%	---	---	6448	4.0%
Aluminum Cans		---	---	444	0.3%	---	---	---	---	---	---	---	---	---	---	---	---	444	0.3%
Tin & Bi-metal Cans		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Ferrous(Kitchenware)		---	---	1493	0.9%	---	---	1600	1.0%	1470	0.9%	---	---	5	*	---	---	4568	2.8%
Non-ferrous		---	---	78	*	---	---	192	0.1%	140	*	---	---	---	---	---	---	410	0.3%
Other Aluminum		---	---	70	*	---	---	---	---	91	*	---	---	---	---	---	---	161	0.1%
White Goods(Appliances)		---	---	---	---	---	---	---	---	---	---	---	---	182	0.1%	---	---	182	0.1%
Auto Bodies		---	---	682	0.4%	---	---	---	---	---	---	---	---	---	---	---	---	682	0.4%
OTHER		---	0.0%	---	0.0%	---	0.0%	780	0.5%	---	0.0%	---	---	2545	1.6%	---	0.0%	3305	2.0%
Tires		---	---	---	---	---	---	704	0.4%	---	---	---	---	---	---	---	---	704	0.4%
Other Rubber		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Wood Wastes		---	---	---	---	---	---	1	*	---	---	---	---	---	---	---	---	1	*
Textile(Clothing)		---	---	---	---	---	---	---	---	---	---	---	28	*	---	---	---	28	*
Leather		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Rock, Concrete		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Yard Waste(Grass Clippings)		---	---	---	---	---	---	55	*	---	---	---	---	2496	1.5%	---	---	2551	1.6%
Manure		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Ag. Crop Residue		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Hazardous		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Other		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	---
Books		---	---	---	---	---	---	---	---	---	---	---	13	*	---	---	---	13	*
Records		---	---	---	---	---	---	---	---	---	---	---	1	*	---	---	---	1	*
Toys		---	---	---	---	---	---	---	---	---	---	---	3	*	---	---	---	3	*
Bulky Waste(Furniture)		---	---	---	---	---	---	---	---	---	---	---	3	*	---	---	---	3	*
TOTAL:		0	0.0%	3418	2.1%	309	0.2%	3543	2.2%	1701	1.0%	0	0.0%	2732	1.7%	---	0.0%	11703	7.2%

--- Indicates no amount reported from survey. * Indicates a value less than 0.1%, or a quantity less than one ton.

Summed numbers may not total as displayed due to rounding.

R. W. Beck & Associates

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4.2 RECYCLING COMPONENT OBJECTIVES

Short-Term and Medium-Term Objectives (1991 - 2000)

1. To divert at least 20 percent of Santa Maria's wastestream through recycling in order to meet the 25 percent diversion mandate by 1995.
2. To expand Santa Maria's existing recycling programs to achieve the short-term planning period diversion goals.
3. To facilitate regional (City of Santa Maria, Guadalupe, Solvang, and the surrounding Unincorporated County) cooperation in the development of intermediate processing and mixed waste processing capabilities in the Santa Maria area.

Market Development Objectives (1991 - 2000)

1. To increase the market for recyclables, including mulch, through City purchase and procurement practices and policies.
2. To work with local manufacturing and agricultural industries to identify opportunities to increase the use of materials recovered in local recycling programs in their production processes.
3. To support legislative efforts at the state and federal level which will require comprehensive recyclable content in manufactured goods.
4. To support a coordinated County-wide educational effort to encourage businesses to purchase goods made with recycled content.
5. To consider applying to the CIWMB for designation as a State Recycling Market Development Zone.

Priority Waste Types

The AB 939 Regulations require each jurisdiction to identify specific waste types as priorities for waste diversion. The jurisdictions may select priority wastes based on criteria such as volume of the solid waste, weight of the solid waste, hazard of the solid waste, the non-renewability of the materials that compose the solid waste, or any other selection criteria.

<u>Priority Waste</u>	<u>Criteria</u>
Newsprint	Weight, Volume
Corrugated Cardboard	Weight, Volume
High Grade Paper	High Marketability
Mixed Paper	Weight, Volume
CA Redemption Glass	Weight
Recyclable Glass	Weight
Aluminum Cans	Marketability, Non-renewable
Tin Cans	Weight, Non-renewable

4.3 EVALUATION OF RECYCLING ALTERNATIVES

This section contains a detailed evaluation of recycling alternatives. The alternatives evaluated are dictated by the requirements of the AB 939 Regulations. For organizational purposes the alternatives have been divided into two general categories: collection alternatives and processing alternatives. The following section provides a description of each recycling alternative evaluated in this section.

4.3.1 DESCRIPTION OF RECYCLING ALTERNATIVES

COLLECTION ALTERNATIVES

1. Residential Curbside Collection

A system of collecting separated or commingled recyclables at the curb of single family dwellings with specialized containers for holding the recyclables and specialized collection equipment to segregate these materials and transport and unload them for processing.

2. Multi-Family Residential Recycling

A system of collecting separated or commingled recyclables at multi-family dwellings with special containers and collection equipment to segregate these materials and transport them for processing.

3. Mobile Recycling Centers

A mobile transport/container system for collecting recyclables that can be provided on a regularly scheduled basis at multiple locations. Mobile centers can be drop-off only or provide redemption/buyback opportunities.

4. Drop-Off Recycling Centers

Stationary containers for receiving recyclables on a voluntary basis. The containers may be specially designed for receiving specific recyclables or can be standard debris box type containers.

5. Buyback Recycling Centers

Recycling facilities where payment is provided for specific recyclable materials. The recycled materials received at buyback facilities can vary widely depending on market conditions, space constraints, and processing equipment. Buyback centers may also be Certified Redemption Centers.

6. Source Separated Commercial Recycling

A recycling program in which corrugated cardboard, glass and high grade office paper as well as other recyclables are picked up separately from other wastes for recycling purposes. This collection is typically provided on a regularly scheduled basis.

PROCESSING ALTERNATIVES

1. Intermediate Processing

Facility(ies) that process both source separated and commingled materials collected in residential and commercial recycling programs. These facilities, known as "IPCs" (Intermediate Processing Centers), typically use both manual and mechanical means for sorting materials and preparing them for market.

2. Mixed Waste Processing

Facilities that receive mixed solid waste for processing to remove the recyclable fraction of the wastestream. These facilities utilize both manual and mechanized means to segregate and process the incoming solid waste. Mixed waste facilities are often developed in conjunction with compost facilities because they can also remove organic materials suitable for compost feedstock.

3. Salvage Operations at the Landfill

This alternative involves establishing a program for removing certain recyclable materials, such as white goods and other metals, at a transfer station and/or landfill. In this alternative salvageable materials are removed manually or by heavy equipment such as tractors and placed in containers or transfer vehicles for transport to a recycling facility.

4.3.2 DEFINITION OF EVALUATIVE CRITERIA AND DISCUSSION TOPICS

This section defines the six criteria and four evaluative discussions that will be used to evaluate the recycling alternatives being considered by the City. The regulations pursuant to AB 939 require that six criteria be used to evaluate recycling alternatives (#1-#6 below) and that there be discussion of four issues (#7-#10 below).

EVALUATIVE CRITERIA:

1. **Reduction Effectiveness:** The effectiveness of the alternative in reducing either solid waste volume, weight, percentage in weight or its volumetric equivalent.
2. **Potential Hazards:** The alternatives's potential for environmental or human health/safety impacts.
3. **Ability to Accommodate Changing Economic, Technological, and Social Conditions:** The alternative's ability to hold up against and accommodate changes in economic, technological and social conditions, such as having a flexible technology that can adapt to changing market needs.
4. **Consequences on Wastestream:** How implementation of the alternative will impact the wastestream, including the types of waste that would be reduced in the stream, as well as the option's potential to result in negative consequences, such as shifting the solid waste generation from one type of solid waste to another.
5. **Ease of Implementation:** The time required to implement the alternative i.e., short-term or medium-term.
6. **Facility Needs:** The need for new facilities or facility expansion to implement the alternative. For example, an option that could make use of existing equipment and systems would have fewer facility needs.

EVALUATIVE DISCUSSIONS:

7. **Consistency with Local Policies, Plans, and Ordinances:** The consistency of the alternative with local policies, plans, and ordinances.
8. **Institutional Barriers to Implementation:** The existence of institutional barriers to the alternative, such as permitting requirements. This criterion would include consideration of public acceptance, private sector acceptance, impact on jobs, and compatibility with the existing waste management infrastructure.
9. **Costs in Short and Medium-Term:** The cost of implementing the alternative.
10. **End-uses/Market Availability:** The availability of end-uses or markets for the materials/products produced.

The AB 939 regulations also require discussions of public versus private ownership and operation and consideration of the following policy options: zoning and building code changes that encourage recycling; rate structure changes that encourage recycling; methods to increase markets; and methods which encourage source separation of materials.

4.3.3 EVALUATION OF ALTERNATIVES

The following section contains an analysis of each of the recycling collection and processing alternatives in terms of the evaluative criteria and discussions contained in the AB 939 Regulations. These detailed evaluations are then summarized on Evaluation Matrices.

EVALUATIVE CRITERIA

Effectiveness

Collection Alternatives

Curbside Collection:	Curbside collection is highly dependant on participation rates. Curbside programs can divert 1 - 10 percent of the wastestream depending on the design of the program and participation rates.
Multi-Family Recycling:	Multi-family recycling is highly dependant on participation rates and demographics. Multi-family programs can divert 1 - 3 percent of the wastestream.
Mobile Recycling:	Mobile recycling programs can divert 1 - 2 percent of the wastestream depending upon the location, operating hours and public awareness.
Drop-Off Recycling:	Drop-offs are typically less effective than curbside collection because this is a less convenient alternative. Drop-off programs may divert between 1 - 2 percent of the wastestream.
Buyback Recycling:	Buyback centers can divert 2 - 6 percent of the solid wastestream depending on location, range of materials handled and purchase price of materials.
Commercial Recycling:	Commercial recycling typically focuses on materials such as cardboard, glass and high grade paper. Effectiveness depends on number of commercial generators, types of materials generated and participation rates. This alternative may divert between 5 - 15 percent of the wastestream.

Processing Alternatives

Intermediate Processing:	Intermediate processing is not a diversion alternative. This alternative supports diversion alternatives by preparing recovered materials for marketing.
Mixed Waste Processing:	Mixed waste processing removes recyclable materials from a non-separated wastestream. This alternative does not rely on public participation to achieve high diversion rates because wastes are accepted, mixed and processed using manual and automated means. Diversion potential from this type of

facility is in the range of 10 - 15 percent of the wastestream.

Salvage Operations:

Salvage operations typically focus on a limited range of materials such as white goods and other bulky metal items. As a result, only a small amount of diversion may be achieved -- typically between .1 - 1 percent of the wastestream.

Hazard

Collection Alternatives

Curbside Collection:

Curbside collection may increase truck traffic and associated air quality and noise impacts. Worker/pedestrian safety hazards may also be associated with curbside collection.

Multi-Family Recycling:

Multi-family recycling may increase truck traffic and associated air quality and noise impacts. Safety hazards may also be associated with increased pick-up.

Mobile Recycling:

Potential exists for illegal disposal of non-recyclables at unsupervised drop-offs.

Drop-Off Recycling:

May increase traffic in the vicinity of the drop-off facility. Potential exists for illegal disposal of non-recyclables.

Buyback Recycling:

May increase traffic in the vicinity. Noise impacts are dependent upon location and equipment used for processing.

Commercial Recycling:

May increase truck traffic and associated air quality and noise impacts.

Processing Alternatives

Intermediate Processing:

This alternative will increase noise levels in and around the facility. Air quality impacts could result from the operation of the processing equipment. Potential health and safety risks exist depending on equipment used and work conditions.

Mixed Waste Processing:

Hazards are similar to those in an intermediate processing facility (above). There may be additional potential health and safety risks for workers on picking lines, loading areas, etc.

Salvage Operations:

Depending on how they are conducted, salvage operations can expose workers to the threat of personal injury from landfill/transfer equipment and trucks delivering materials. Injuries may also result from handling salvageable materials.

Ability to Accommodate Change

Collection Alternatives

Curbside Collection:	May be expanded or reduced in scope to accommodate changing demographics or wastestream characteristics. Collection vehicles and waste types may be added or subtracted from the service.
Multi-Family Recycling:	Ability to accommodate social, technological and economic changes similar to curbside recycling.
Mobile Recycling:	Can easily be expanded or reduced in scope to accommodate changing conditions.
Drop-Off Recycling:	Drop-off centers can be expanded or reduced in scope to accommodate changing social, technological and economic conditions. Drop-off centers can increase or decrease the types and quantities of materials accepted and add or remove processing equipment.
Buyback Recycling:	Similar to drop-off centers although more limited in terms of types of materials which can be accepted.
Commercial Recycling:	Commercial source separated collection is typically carried out using existing collection equipment. These programs can be expanded or reduced in scope relatively easily.

Processing Alternatives

Intermediate Processing:	Intermediate processing equipment can process a range of materials depending on separation techniques and storage and processing equipment. The facilities can be designed to allow for expansion or modification.
Mixed Waste Processing:	Mixed waste processing systems can be designed to allow for relatively easy expansion or modification. In addition, these systems can be adjusted to direct materials to different end-markets on the basis of changing market conditions.
Salvage Operations:	Salvage operations can be easily adjusted to reflect changing conditions because they typically use existing multi-purpose equipment and manual labor.

Consequences on the Wastestream

All of the alternatives considered in this analysis will have the effect of reducing the quantities of recyclable materials (cardboard, newspaper, high grade paper, PET plastic, HDPE plastic,

recyclable glass, aluminum and tin) in the characterized wastestream as identified in the Waste Generation Study completed as part of this planning process. The only exception to this is intermediate processing, which supports diversion alternatives and will not directly affect the wastestream.

Time Frame for Implementation

All of the collection alternatives considered in this analysis could be implemented in either the short or medium-term planning periods. Alternatives which require the development of facilities, such as mixed waste processing, may have an implementation time-frame which extends into the medium-term due to siting, permitting and environmental documentation requirements.

Need for Facilities

Collection Alternatives

Curbside Collection:	Curbside recycling will require access to an intermediate processing facility for preparing materials for market.
Multi-Family Recycling:	Multi-family recycling will require access to an intermediate processing facility for preparing materials for market.
Mobile Recycling:	Mobile recycling will require access to an intermediate processing facility for preparing materials for market.
Drop-Off Recycling:	Would require new or expanded collection facilities.
Buyback Recycling:	May require new or expanded collection facilities.
Commercial Recycling:	No new facilities would be needed but upgraded processing capabilities are required.

Processing Alternatives

Intermediate Processing:	Intermediate processing will require a facility with processing equipment. The County currently has a intermediate processing facility at the South Coast Transfer Station. An intermediate processing center may be necessary to support the level of recycling programs proposed for Santa Maria.
Mixed Waste Processing:	Mixed waste processing would require the development of a new facility.
Salvage Operations:	Salvage operations typically take place at a transfer station or landfill and do not require a special facility.

EVALUATIVE DISCUSSIONS

Consistency with Local Plans, Policies and Ordinances

There are no plans, policies or ordinances that inhibit or discourage *curbside collection* of recyclable materials. Curbside collection is currently being implemented and is encouraged by local governments.

The siting of additional *buyback centers or drop-offs* is not specifically provided for in the City's land use plans and zoning maps. Expansion of existing buyback or drop-off activities not involving a land-use change or a modification of conditional use permits is consistent with local policies.

Commercial source separated collection, multi-family collection, mulching and publicly operated *salvage operations* at the landfill are generally consistent with local plans, policies and ordinances. Salvage operations which are not part of the regular operations at the landfill are not permitted.

The development of both *intermediate processing and mixed waste processing* capability in Santa Maria would require a California Environmental Quality Act (CEQA) determination and the fulfillment of other state and local permitting requirements.

Institutional Barriers

Potential institutional barriers include siting and permitting constraints, franchise agreements and/or hauling permits that may need modification before program implementation, as well as zoning and other land-use regulations which may prevent the development of recycling facilities in some locations.

Implementation Costs

Collection Alternatives

The costs of existing residential *curbside recycling* programs within the County are about 1.25/household per month or about \$95 - \$105 per ton. Other residential curbside recycling programs around the state are reporting costs of between \$1.25 and \$3.00/household per month. Where automated collection exists, these costs can be reduced because no new collection vehicles are needed. The principal costs for automated curbside collection is for the purchase of commingled collection containers.

The costs for developing buyback *or supervised drop-off centers* vary significantly, depending on factors such as location, site, size, types of materials collected, hours of operation, and types of operating equipment. Data from previous studies indicates that the costs of these alternatives typically range between \$0 - \$30/ton collected. The costs of *mobile recycling* based on local operating history are approximately \$40 - \$60/ton. The costs of *commercial recycling* are also difficult to generalize due the wide variety of program designs. Most commercial recovery programs focus on collection of corrugated cardboard, high grade paper and glass. This type of "high grade" recycling collection typically pays for itself from revenues from the sale of recovered materials. Commercial programs which are broader based and collect materials such as mixed waste paper and other lower value waste types may cost between \$30 - \$80 per ton. The costs associated with *multi-family recycling* range between \$60-\$80 per ton, or about \$1.25/apartment

unit/month.

Processing Alternatives

The costs associated with operating an *intermediate processing* facility which is capable of processing both fully source separated and commingled recyclables is approximately \$30 - \$45/ton processed.

Mixed waste processing facilities have highly variable costs depending on factors such as type of technology, facility capabilities (such as composting), site costs, and scale of operation. However, national data indicates a cost range of between \$30 - \$60 per ton processed.

Mulching of wood and yard waste will cost between \$15 - \$25/ton processed before any potential revenues.

Salvage operations at the Santa Maria Landfill are currently costing approximately \$0 - \$10/ton.

The Availability Of Markets

Markets are well established for most of the commodities that would be collected in the programs which require some level of source separation. The increases in recovery locally and regionally are likely to create supply/demand imbalances (i.e., gluts) for many different materials (particularly paper grades, glass and plastics) over both the short and medium-term planning periods. Materials separated at a mixed waste processing facility may be more contaminated than source separation materials (particularly high grade paper, newsprint and mixed paper), and, thus, may be more difficult to market. Mulch is a commodity for which there has not been an established market historically in the Santa Barbara County region. Based on local pilot tests and water conservation needs, it is believed that a marketable mulch product can be developed which will have wide appeal among potential residential, municipal and commercial users.

4.3.4 COMPONENT SPECIFIC REQUIRED DISCUSSIONS

Public vs. Private Ownership and Operation

Before considering public vs. private ownership/operation of recycling activities, it is important to understand the existing institutional arrangements for solid waste management. All Cities in Santa Barbara County deliver their solid waste to publicly owned or leased landfills. This solid waste infrastructure reflects a historical pattern of public ownership and operation of solid waste landfills and transfer capability. Solid waste collection services, with the exception of Santa Maria and Lompoc, have traditionally been provided by franchised haulers contracted by the County and cities in Santa Barbara County.

The advantages associated with public control of recycling activities include the ability to readily implement new and expanded facilities using existing publicly owned land. Public ownership and operations control enables the public sector to control the flow of collected wastes which would be essential to the economics of a facility (ies). Public control also improves the participating jurisdictions ability to monitor solid waste diversion from recycling activities. Disadvantages to public ownership and operation of recycling activities include financial risks associated with large capital investment to achieve greater diversion rates and lack of operating experience for some types of recycling activities.

The advantages of private ownership and operation of recycling activities include lower public capital investment in collection and processing infrastructure, potentially more efficient operations, and minimized public financial risk. The disadvantages of private ownership and operation of recycling activities include the loss of public control over the solid wastestream and increased difficulty in siting and permitting private facilities. The existing institutional arrangement for solid waste management and recycling activities has been successful because it combines the strengths associated with the public, private and non-profit sectors in the delivery of services. As additional recycling activities are added, it is anticipated that this balanced institutional arrangement will continue to take advantage of the efficiencies afforded by private technical and managerial experience working in cooperation with public agencies.

Zoning and Building Code Changes that Encourage Recycling

Existing zoning and building codes do not require that space be provided for storage of recyclables in multi-family and commercial/industrial buildings. Design review standards could be developed for the City of Santa Maria which would require that all new multi-family and commercial/industrial buildings provide sufficient space for the collection and storage of recyclables. This has been done in many other jurisdictions and there are model ordinances available to provide guidance for implementing these code changes.

Rate Structure Changes that Encourage Recycling

Rate structure changes are being implemented in other jurisdictions to discourage solid waste generation and encourage recycling. One rate structure modification that has been considered widely is the variable can rate. A variable can rate could allow the city to charge solid waste generators according to the quantity of waste set-out for collection. Seattle, Washington, has implemented a variable can rate system in which residents are provided with various sized containers and charged accordingly. Seattle claims that this has resulted in both a reduction in the solid waste generated as well as an increase in recycling program participation. A variable can rate is evaluated for the City of Santa Maria in the Source Reduction Component. Other rate structure changes being considered for the Santa Maria area include differential disposal tipping fees for clean loads of mulchable yard and wood waste and bulky recyclable items such as mattresses and white goods.

Methods to Increase Markets

Market development is essential to the success of local diversion efforts from recycling. Without significant expansion of secondary markets for recycled paper, plastic and glass market saturation levels could be reached as recycling programs are implemented throughout the state and the nation. Procurement of products manufactured from recycled materials is one activity that the city can implement which will help stimulate market development. While there may not be a price incentive for local governments to seek products made with recycled content, it is expected that broad-scale procurement activities by state and local government will create a more competitive market for recycled content materials and improve the cost effectiveness of procurement policies for local government. In addition to procurement, the City can support market development in several important ways. It can be supportive of legislative efforts to deepen markets for recyclables. Content legislation which requires the production of manufactured goods made with a percentage of recycled material is among the most direct ways of increasing markets for recyclables. The City, working in cooperation with the County and other cities, could support such legislation in Sacramento.

In cooperation with the County and other cities, Santa Maria can monitor the California Integrated Waste Management Board's (CIWMB) mandated recycling market development activities as required by Senate Bill 1322. This law requires the CIWMB to oversee the procurement policies of all state agencies to insure that they are in fact procuring products made with recycled content. Since state agencies such as the California Department of Transportation (Caltrans) are potential buyers of locally produced mulch, the effective implementation of State procurement policies could significantly effect market development. SB 1322 includes a provision for Recycling Markets Development Zones where manufacturers who use recyclables for manufacturing could enjoy special facility siting and/or tax exemptions. The City should determine if it wants to pursue this mechanism as a potential means of market development.

Santa Maria can also seek to increase consumer and private procurement of products made with recycled content through the County-wide education program selected for implementation in this plan. Increased consumer and private sector procurement of products made with recycled content could have an significant impact on market development for recovered recyclables. In summary, the following actions are means of stimulating markets for recovered recyclable materials:

1. Support local, state-wide and national content legislation.
2. Participate either directly, or through Santa Barbara County programs such as the Southern California Market Roundtable which seeks to improve market conditions for participating cities and counties in Southern California.
3. Implement procurement programs that require recycled content in products purchased by the City.
4. Educate the private sector and the public about the importance of buying recycled products as a means of encouraging market development.
5. Apply to the CIWMB for designation as a Market Development Zone

Market Development Zones

Implementation of the Source Reduction and Recycling Elements of the County of Santa Barbara and the Cities located within the County will greatly increase the flow of recovered materials entering the secondary materials markets. Market Development Zones (MDZ) are specific areas designated for the establishment of new businesses that will manufacture products made from recycled materials and for manufacturing activities related to recycled products. These businesses would utilize recovered materials, create employment opportunities, expand the local tax base, and decrease integrated waste management system costs. To encourage these types of businesses to locate in specifically designated MDZs, the CIWMB has developed a program designed to assist local governments in attracting these firms. The program makes low interest loans and research and development grants available for local efforts to develop MDZs. A city, county individual or business can submit an application for this program. The CIWMB will evaluate the application to determine if the proposed zone can be successful based on factors including:

1. the ability to provide a consistent flow of high quality feedstock to businesses;
2. the effectiveness of the plan for attracting and expanding recycling businesses or for converting existing local businesses to users of recovered materials;

3. well developed program administration;
4. the demonstration of a commitment to provide any necessary local regulatory and financial incentives;
5. the adequacy of financing programs to support recycling businesses;
6. the adequacy of existing or planned recycling infrastructure; and,
7. availability of necessary land.

Applications which meet the minimum scoring criteria will be evaluated against Statewide recycling and market development objectives, which may change from one designated cycle to the next. The statewide recycling and market development objectives may include issues such as remaining disposal capacity, geographic distribution of zones, and the potential for taking advantage of advances in recycling technology. After the CIWMB selects applications which meet these criteria and demonstrate they can succeed an MDZ may be designated. In order for a jurisdiction to maintain eligibility for MDZ designation, it is required to indicate intent to apply to the CIWMB in the Source Reduction and Recycling Element (SRRE). Thus, the City of Santa Maria has determined that it would be beneficial to the City and the surrounding communities to apply for recycling market development zone designation and declares its intent to apply to the MDZ designation program.

Methods which Encourage Source Separation of Materials

The City has determined that materials can be collected in a variety ways while preserving the integrity of recovered materials so that they can be effectively marketed and used in secondary materials manufacturing. The City believes that its proposed recycling activities balance the need for preserving the integrity of the recyclables with the goal of achieving the highest diversion rates at the least cost.

4.3.5 ALTERNATIVES COMPARISON MATRICES

The following tables provide a summary of the evaluation of recycling program alternatives:

TABLE 4.3.5-A
Recycling Evaluation
MATRIX #1

EVALUATION OF RECYCLING ALTERNATIVES

Evaluative Criteria						Evaluative Discussions			
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability
yes #1									
Highly dependent on participation rates. Can divert between 3 - 10%.	May cause traffic impacts and increase worker/ pedestrian hazards.	May be expanded or reduced for changes in demographics or waste character- istics.	Can decrease quantities of recyclable materials including: cardboard, newspaper and other paper grades, glass, oil, aluminum, and plastic.	May be implemented in short or medium term planning period.	Will require collection infrastructure and processing facility.	Not inconsistent with existing plans and policies.	May require changes in franchise agreements.	Costs range from \$95 - 105 per ton, or \$.95 - 3.00 per home per month.	Markets for material are available.
Highly dependent on participation rates and demographics. Can divert between 1 -3%.	May cause traffic impacts and increase worker/ pedestrian hazards.	May be expanded or reduced for changes in demographics or waste character- istics.	Can decrease quantities of recyclable materials including: cardboard, newspaper and other paper grades, glass, oil, aluminum, and plastic.	May be implemented in short or medium term planning period.	Will require collection infrastructure and processing facility.	Not inconsistent with existing plans and policies.	May require changes in franchise agreements.	Costs range from \$40 - 60 per ton.	Markets for material are available.
Programs can divert between 1 - 3% depending upon location and public awareness.	May cause traffic impacts and increase worker/ pedestrian hazards.	May be expanded or reduced for changes in demographics or waste character- istics.	Can decrease quantities of recyclable materials including: cardboard, newspaper and other paper grades, glass, oil, aluminum, and plastic.	May be implemented in short or medium term planning period.	Will require collection infrastructure and processing facility.	Not inconsistent with existing plans and policies.	May require changes in franchise agreements.	Costs range from \$60 - 80 per ton.	Markets for material are available.

TABLE 4.3.5-B
Recycling Evaluation
MATRIX #2

EVALUATION OF RECYCLING ALTERNATIVES

Evaluative Criteria						Evaluative Discussions			
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability
Collection Alternatives #2									
Drop-Off Recycling	Typically less effective than curbside recycling. May divert between 3 - 8%.	May increase traffic near facility. Potential for illegal dumping.	May be expanded or reduced for changes in demographics or waste characteristics.	Can decrease quantities of recyclable materials including: cardboard, newspaper, glass, oil plastic, aluminum and various paper grades.	May be implemented in short or medium term planning period.	No new facilities are needed.	Not inconsistent with existing plans and policies. May require changes in land use determinations.	Siting and zoning requirements and existing land uses.	Costs range from \$0 - \$30 per ton. Markets are available for material.
Buyback Recycling	Can divert between 2 - 5%.	May increase traffic in vicinity of facility and increase noise impacts.	May be expanded or reduced for changes in demographics or waste characteristics.	Can decrease quantities of recyclable materials including: cardboard, newspaper, glass, oil plastic, aluminum and various paper grades.	May be implemented in short or medium term planning period.	No new facilities are needed. Upgraded processing facilities may be necessary.	Not inconsistent with existing plans and policies. May require changes in land use determinations.	Siting and zoning requirements and existing land uses.	Costs range from \$0 - \$30 per ton. Markets are available for material.
Commercial Recycling	Effectiveness depends on quantity of commercial generators and participation rates. Can divert 5 - 15%.	May increase traffic impacts.	May be expanded or reduced for changes in demographics or waste characteristics.	Can decrease quantities of recyclable materials including: cardboard, newspaper, glass, oil plastic, aluminum and various paper grades.	May be implemented in short or medium term planning period.	No new facilities are needed. Upgraded processing facilities may be necessary.	Not inconsistent with existing plans and policies.	May require changes in franchise agreements.	Wide variety of costs depending on type of commercial collection program. Markets are available for material.

TABLE 4.3.5-C

Recycling Evaluation

MATRIX #3

EVALUATION OF RECYCLING ALTERNATIVES

Evaluative Criteria						Evaluative Discussions				
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability	
Processing Alternatives										
Intermediate Processing	Not a diversion alternative but supports other methods by preparing materials for market.	Potential noise, air quality and worker safety hazards exist.	Facilities can be designed to allow for expansion or modification.	Supports other recycling alternatives.	May be implemented in short or medium term planning period.	Facility necessary to support North County activity.	Would require CEQA determination.	Siting and zoning requirements and existing land uses.	Costs range from \$15 - 40 per ton.	Markets are available for material.
Mixed Waste Processing	Does not rely on public participation to increase diversion rates. Can achieve 10 - 15% diversion.	Potential noise, air quality and worker safety hazards exist.	Facilities can be designed to allow for expansion or modification.	Can decrease quantities of recyclable materials including: cardboard, newspaper, glass, oil plastic, aluminum and various paper grades.	May be implemented in medium term.	Would require development of new facility.	Would require CEQA determination.	Siting and zoning requirements and existing land uses.	Costs range from \$30 - 60 per ton.	Contamination may effect material marketability.
Salvage Operations	Focuses on a limited range of materials. Can divert 1%.	Potential worker safety hazards exist.	Can be easily adjusted to accomodate change.	Can decrease quantities of recyclable materials including: cardboard, newspaper, glass, oil plastic, aluminum and various paper grades.	May be implemented in medium term.	No new facilities are needed.	Not inconsistent with existing plans and policies.	Present operational practices.	Small additional costs.	Markets are available for material.

4.4 SELECTION OF RECYCLING ALTERNATIVES

This section describes the specific alternatives which have been selected for implementation. Selection has been based on existing conditions and the evaluation of alternatives required under the AB 939 regulations. The following is a summary of the program selected for the short and medium term planning periods for the City of Santa Maria:

Short-Term Planning Period (1991-1995)

- Continue and expand existing buyback recycling and curbside recycling programs where possible.
- Expand existing source separated collection of commercial and industrial recyclable materials.
- Implement a mulching program for yard and wood wastes at the Santa Maria Landfill.
- Participate in scoping and developing a mixed waste processing facility serving Santa Maria, Solvang, Guadalupe, and the surrounding Unincorporated areas. This could be an Integrated Diversion Facility (IDF) providing both mixed waste processing and composting capabilities. The facility could be developed through a phased approach, expanding to include composting in the medium-term.
- Participate in local and regional recyclable materials market development activities by applying to be part of a designated market development zone, supporting content legislation, participating in the Southern California Markets Roundtable, implementing recycled content procurement policies, and encouraging private sector activities which expand secondary materials markets.

Medium-Term Planning Period (1996-2000)

- Source separated recycling collection activities, mulching, market development activities and mixed waste processing continue.

4.4.1 PROGRAM DESCRIPTION AND RATIONALE FOR SELECTION

The following section provides a rationale for the selection of recycling alternatives. This section provides a description of the alternative, an estimate of each alternative's diversion potential, a description of the proposed alternative's handling methods, a description of any facilities required for implementation, and a discussion of market availability, planned market development activities, and measures to be taken in the event of adverse market conditions. Santa Maria currently has a limited recycling infrastructure consisting primarily of buyback and commercial recycling programs (current diversion through recycling is about 5.5 percent). In order for the City to reach the 25 percent and 50 percent diversion mandates of AB 939, a major increase in recycling programs will be needed for both the short and medium term.

Continue Curbside Collection

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local

conditions, continuation and expansion of the existing curbside collection system has been selected for both the short and medium-term planning periods. Santa Maria has a large number of residential generators living in single-family residences which are amenable to curbside collection services. Although curbside recycling will produce only a modest diversion rate (about 1.5 - 3 percent), it is a relatively effective means of diverting materials as well as involving the community in recycling.

Buyback Collection

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, continuation and expansion of the existing buyback/drop-off system has been selected for both the short and medium-term planning periods. This alternative has been selected for several reasons including ease of expansion, increased diversion, and cost effectiveness. Buyback centers have played an important recycling role in Santa Maria. Expansion of the buyback will involve increasing the quantities of materials accepted at the facility as well as adding new materials such as: magazines and mixed paper, tin cans, and HDPE plastics.

Expand Commercial Source-Separated Collection

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, continuation and expansion of the existing commercial/industrial source separated collection has been selected for both the short and medium-term planning periods. This alternative has been selected because commercial and industrial generators generate approximately 76 percent of the City's wastestream. Although there is currently some limited source separated collection from commercial generators, the total diversion of less than 1 percent of paper from the 30 percent currently being disposed of indicates that the City should implement a commercial/industrial paper recovery program. Other recyclable materials such as plastics and metals comprise large percentages of Santa Maria's commercial/industrial wastestream that can be recovered. It is recommended that the City determine those commercial generators that produce the largest amount of commercial/industrial waste and that these generators be targeted for a source separated commercial/industrial recycling program. In the short-term, collection routes can be "high graded." In this system, special routes are configured for generators of high quantities of recyclables such as corrugated cardboard and high grade paper. In the medium-term, this program could be expanded to a "wet/dry" system whereby all commercial/industrial solid wastes would be collected in containers in two categories: 1) mixed recyclables (paper grades, metals, containers); and, 2) everything else (food wastes, mixed plastic, contaminated paper etc.). These materials would be hauled in to a processing facility for separation. Improved processing capability is needed to process the recovered materials for marketing will be needed to maximize the effectiveness of commercial/industrial recycling. An intermediate processing facility and/or a mixed waste processing facility would provide this needed processing capability.

Multi-family Housing Source Separated Collection

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, multi-family housing (apartment recycling) has been selected for both the short and medium-term planning periods. There is currently no multi-family collection of recyclables in the City of Santa Maria. Nearly half of Santa Maria's housing units are multi-family. A program to serve the multi-family community has been selected due to the potential diversion from these generators.

Mixed Waste Processing

Based on the Solid Waste Generation Study, the evaluation of alternatives, and existing local conditions, a mixed waste processing facility has been selected for implementation in the short-term planning period. This type of facility will be necessary to enable the city to attain the AB 939 diversion mandates. For maximum efficiency and cost effectiveness, this facility should be designed to include composting capabilities as a future (medium-term) phase of development (see the Composting Component, section 5.0). The facility would receive commercial, industrial and residential source-separated and mixed solid waste for processing. If designed jointly, the facility would accept source separated and mixed compostable organic materials such as yard waste and food wastes for composting in the medium-term (after 1995).

Yard and Wood Waste Mulching

Based on the Solid Waste Generation Study, the evaluation of alternatives, and existing local conditions, a yard and wood waste mulching program has been selected for implementation in the short-term planning period. This alternative has been selected based on the relatively large quantities of yard waste and wood waste identified in the Solid Waste Generation Study, as well as the potentially significant water conservation benefits resulting from mulching. According to the Evaluation of Alternatives mulching is a very cost effective means of yard waste and wood waste management. It will be necessary to conduct market development to identify users for the mulch produced, but it is expected that there will be a demand for a high quality mulch product. In addition, this alternative can be efficiently combined with the existing processing of yard and wood waste for fuel production.

4.4.2 ANTICIPATED DIVERSION FROM SELECTED ALTERNATIVES

The tables on following pages estimate diversion from each of the selected recycling alternatives. The tables estimate solid waste diversion by waste type for each year in the short and medium-term planning period. The tables list the participation rate (a measure of the percent of residents and businesses participating in the program, or, for mixed waste processing, a measure of the percentage of the waste stream which is actually processed) and capture rates (a measure of the *how much* program target groups participate, or, for mixed waste processing, *how much* of each processed waste type might be recoverable).

Table 4.4.2-A

City of Santa Maria Recycling Component Program Diversion Summary			
Recycling Component Programs	Estimated Diversion Percent 1990	Estimated Diversion Percent 1995	Estimated Diversion Percent 2000
Curbside Collection	0.2%	2.2%	2.3%
Buyback/Drop-Off Collection	1.7%	2.2%	2.4%
Multi-Family Collection	0.0%	1.0%	1.0%
Comm./Ind. Source Separation	3.2%	9.0%	10.0%
Mulching	0.0%	2.0%	2.0%
Mixed Waste Processing	0.0%	13.0%	13.0%
Total Recycling Diversion	5.1%	29.4%	30.7%

Table 4.4.2-B

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMFRESOC

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Curbside Collection
 GENERATOR TYPE: Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Residential Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Newsprint	5.6%	75%	90%	3.8%
Mixed Paper	8.8%	75%	50%	3.3%
Glass	2.7%	75%	90%	1.8%
Aluminum Cans	0.3%	75%	50%	0.1%
PETE	0.2%	75%	50%	0.1%
HDPE	0.9%	75%	50%	0.3%
Tin Cans	1.4%	75%	35%	0.4%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Residential Disposal:	36,090	37,101	38,139	39,207	40,305	41,434	42,594	43,786	45,012	46,273	47,568
Material Type											
Newsprint	302	302	1,442	1,482	1,524	1,566	1,610	1,655	1,701	1,749	1,798
Mixed Paper	0	0	0	0	1,330	1,367	1,406	1,445	1,485	1,527	1,570
Glass	7	7	695	715	735	755	776	798	820	843	867
Aluminum Cans	0	0	47	49	50	51	53	54	56	57	59
PETE	0	0	29	29	30	31	32	33	34	35	36
HDPE	0	0	129	132	136	140	144	148	152	156	161
Tin Cans	0	0	140	144	148	152	157	161	165	170	175
Total Quantity Diverted (tpy)	309	309	2,481	2,551	3,952	4,063	4,177	4,294	4,414	4,538	4,665
Total Diversion (%)	0.2%	0.2%	1.5%	1.5%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%

NOTES:

1. Estimated wastestream growth rate: 2.8% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R. See also page 3-45, table 3-AO of the SWGS.

Table 4.4.2-C

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMRESBUY

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Buyback/Drop-off Collection
 GENERATOR TYPE: Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Residential Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Newsprint	5.6%	15%	90%	0.76%
Corrugated Cardboard	10.2%	15%	50%	0.77%
High Grade	0.5%	15%	50%	0.04%
Glass	2.7%	15%	90%	0.36%
Aluminum Cans	0.3%	15%	75%	0.04%
PETE	0.2%	15%	75%	0.02%
HDPE	0.9%	15%	50%	0.07%
Ferrous	1.4%	15%	35%	0.07%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Residential Disposal:	36,090	37,101	38,139	39,207	40,305	41,434	42,594	43,786	45,012	46,273	47,568
Material Type											
Newsprint	0	0	288	296	305	313	322	331	340	350	360
Corrugated Cardboard	58	60	292	300	308	317	326	335	344	354	364
Mixed Paper	0	0	0	0	15	16	16	16	17	17	18
Glass	567	583	599	616	633	651	669	688	707	727	747
Aluminum Cans	444	456	483	511	541	571	603	636	671	707	744
PETE	26	27	36	46	56	67	79	91	103	117	131
HDPE	0	0	26	26	27	28	29	30	30	31	32
Ferrous	1,493	1,535	1,606	1,680	1,756	1,836	1,919	2,004	2,094	2,186	2,283
Non-Ferrous (2)	148	152	156	161	165	170	175	180	185	190	195
Total Quantity Diverted (tpy)	2,736	2,813	3,487	3,637	3,807	3,969	4,137	4,311	4,491	4,679	4,873
Total Diversion (%)	1.7%	1.7%	2.1%	2.1%	2.1%	2.2%	2.2%	2.3%	2.3%	2.4%	2.4%

NOTES:

1. Estimated wastestream growth rate: 2.8% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.
2. No increase in non-ferrous diversion above waste stream growth rate expected through buyback/drop-off.
3. Existing (1990-91) buyback/drop-off from SWGS page 3-45, table 3-AO.

Table 4.4.2-D

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMRESMUL

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Multi-family Collection
 GENERATOR TYPE: Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Residential Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Newsprint	5.6%	20%	90%	1.01%
Corrugated Cardboard	10.2%	20%	50%	1.02%
Glass	2.7%	20%	90%	0.49%
Aluminum Cans	0.3%	20%	50%	0.03%
PETE	0.2%	20%	75%	0.03%
HDPE	0.9%	20%	50%	0.09%
Ferrous	1.4%	20%	35%	0.10%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Residential Disposal:	36,090	37,101	38,139	39,207	40,305	41,434	42,594	43,786	45,012	46,273	47,568
Material Type											
Newsprint	0	0	384	395	406	418	429	441	454	466	479
Corrugated Cardboard	0	0	389	400	411	423	434	447	459	472	485
Glass	0	0	185	191	196	201	207	213	219	225	231
Aluminum Cans	0	0	13	13	13	14	14	14	15	15	16
PETE	0	0	11	12	12	12	13	13	14	14	14
HDPE	0	0	34	35	36	37	38	39	41	42	43
Ferrous	0	0	37	38	39	41	42	43	44	45	47
Total Quantity Diverted (tpy)	0	0	1,055	1,084	1,114	1,146	1,178	1,211	1,245	1,279	1,315
Total Diversion (%)	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%

NOTES:

1. Estimated wastestream growth rate: 2.8% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.

Table 4.4.2-E

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMCMSSPEC

COMPONENT: Santa Maria Recycling Component
PROGRAM: Source Separated Commercial Collection
GENERATOR TYPE: Commercial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Commercial Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Corrugated Cardboard	13.5%	25%	90%	3.0%
Newsprint	2.6%	25%	90%	0.6%
Mixed Paper	4.6%	25%	75%	0.9%
High Grades	1.6%	25%	90%	0.4%
Glass	2.2%	25%	50%	0.3%
HDPE	0.4%	25%	50%	0.1%
Aluminum Cans	0.3%	25%	50%	0.0%
Non-Ferrous	0.4%	25%	50%	0.1%
Ferrous	2.4%	25%	50%	0.3%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Commercial Disposal:	79,690	81,124	82,585	84,071	85,584	87,125	88,693	90,290	91,915	93,569	95,254
Material Type											
Corrugated Cardboard	921	938	2,509	2,554	2,600	2,646	2,694	2,743	2,792	2,842	2,893
Newsprint	0	0	483	492	501	510	519	528	538	547	557
Mixed Paper	42	43	44	44	738	751	765	779	793	807	822
High Grades	28	29	297	303	308	314	319	325	331	337	343
Glass	0	0	231	235	240	244	248	253	257	262	267
HDPE	0	0	41	42	43	44	44	45	46	47	48
Aluminum Cans	0	0	31	32	32	33	33	34	34	35	36
Non-Ferrous	192	195	244	295	347	402	458	515	575	637	701
Ferrous	1,600	1,629	1,906	2,192	2,489	2,795	3,111	3,438	3,776	4,124	4,484
Total Quantity Diverted (tpy)	2,783	2,833	5,786	6,189	7,297	7,738	8,192	8,660	9,142	9,639	10,150
Total Diversion (%)	2%	2%	5%	5%	6%	6%	6%	6%	6%	7%	7%

NOTES:

- Estimated wastestream growth rate: 1.8% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.
- Existing (1990-91) commercial source separation from SWGS page 3-45, table 3-AO.

Table 4.4.2-E-1

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMINDSS

COMPONENT: Santa Maria Recycling
 PROGRAM: Source Separated Industrial Collection
 GENERATOR TYPE: Industrial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Industrial Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Corrugated Cardboard	23.5%	10%	75%	1.76%
Newsprint	0.8%	10%	75%	0.06%
Mixed Paper	8.4%	10%	50%	0.42%
High Grades	5.0%	10%	75%	0.37%
Glass	0.4%	10%	50%	0.02%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Industrial Disposal:	34,582	35,594	36,635	37,706	38,809	39,944	41,113	42,315	43,553	44,827	46,138
Material Type											
Corrugated Cardboard	0	0	646	665	684	704	725	746	768	790	813
Newsprint	0	0	22	23	23	24	25	25	26	27	28
Mixed Paper	0	0	0	0	163	168	173	178	183	188	194
High Grades	0	0	137	141	145	149	153	158	162	167	172
Glass	0	0	7	8	8	8	8	8	9	9	9
Non Ferrous (2)	231	238	245	252	259	267	275	283	291	299	308
Ferrous (2)	1,470	1,513	1,557	1,603	1,650	1,698	1,748	1,799	1,851	1,905	1,961
Total Quantity Diverted (tpy)	1,701	1,751	2,614	2,690	2,932	3,017	3,106	3,196	3,290	3,386	3,485
Total Diversion (%)	1%	1%	3%	3%	3%	3%	3%	3%	3%	3%	3%

NOTES:

- Estimated wastestream growth rate: 2.9% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.
- No increase in non-ferrous and ferrous diversion above waste stream growth rate expected through this alternative.
- Existing (1990-91) private industrial collection (source separated) from SWGS page 3-45, table 3-AO.

Table 4.4.2-F

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMMULCH

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Yard and Wood Waste Mulching
 GENERATOR TYPE: Commercial and Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Aggregate Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Yard Waste	16.2%	25%	50%	2.0%
Wood Waste	1.9%	25%	50%	0.2%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Comm/Res Disposal:	150,360	153,818	157,356	160,975	164,678	168,465	172,340	176,304	180,359	184,507	188,751
Material Type											
Yard Waste	55	55	3,186	3,260	3,335	3,411	3,490	3,570	3,652	3,736	3,822
Wood Waste	0	0	374	382	391	400	409	419	428	438	448
Total Quantity Diverted (tpy)	55	55	3,560	3,642	3,726	3,812	3,899	3,989	4,081	4,174	4,270
Total Diversion (%)	0.03%	0.03%	2%	2%	2%	2%	2%	2%	2%	2%	2%

NOTES:

1. Estimated wastestream growth rate: 2.3% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.

Table 4.4.2-G

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMCMIX

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Mixed Waste Processing
 GENERATOR TYPE: Commercial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Commercial Waste Stream	Percent of Uncommitted Wastestream	Estimated Capture Rate	Effective Recovery Rate
Corrugated Cardboard	13.5%	65%	75%	6.6%
Newsprint	2.6%	65%	75%	1.3%
Mixed Paper	4.6%	65%	50%	1.5%
High Grades	1.6%	65%	35%	0.4%
Glass	2.2%	65%	50%	0.7%
HDPE	0.4%	65%	75%	0.2%
Aluminum Cans	0.3%	65%	75%	0.1%
Other Aluminum	0.4%	65%	75%	0.2%
Ferrous	2.4%	65%	90%	1.4%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Commercial Disposal:	79,690	81,124	82,585	84,071	85,584	87,125	88,693	90,290	91,915	93,569	95,254
Material Type											
Corrugated Cardboard	0	0	0	0	0	5,734	5,837	5,942	6,049	6,158	6,269
Newsprint	0	0	0	0	0	1,104	1,124	1,144	1,165	1,186	1,207
Mixed Paper	0	0	0	0	0	1,303	1,326	1,350	1,374	1,399	1,424
High Grades	0	0	0	0	0	317	323	329	335	341	347
Glass	0	0	0	0	0	634	646	657	669	681	693
HDPE	0	0	0	0	0	170	173	176	179	182	186
Aluminum Cans	0	0	0	0	0	127	130	132	134	137	139
Other Aluminum	0	0	0	0	0	187	190	194	197	201	204
Ferrous	0	0	0	0	0	1,223	1,245	1,268	1,290	1,314	1,337
Total Quantity Diverted (tpy)	0	0	0	0	0	10,800	10,994	11,192	11,393	11,598	11,807
Total Diversion (%)	0%	0%	0%	0%	0%	6%	6%	6%	6%	6%	6%

NOTES:

1. Estimated wastestream growth rate: 1.8% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.

Table 4.4.2-G-1

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

FILENAME=SMINDMIX

COMPONENT: Santa Maria Recycling Component
 PROGRAM: Mixed Waste Processing
 GENERATOR TYPE: Industrial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Industrial Waste Stream	Percent of Uncommitted Stream	Estimated Capture Rate	Effective Recovery Rate
Corrugated Cardboard	23.5%	75%	90%	15.9%
Newsprint	0.8%	75%	75%	0.5%
Mixed Paper	8.4%	75%	50%	3.2%
High Grades	5.0%	75%	50%	1.9%
Glass	0.4%	75%	25%	0.1%
Non-Ferrous	0.4%	75%	50%	0.2%
Ferrous	12.0%	75%	90%	8.1%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Indus. Disposal:	34,582	35,594	36,635	37,706	38,809	39,944	41,113	42,315	43,553	44,827	46,138
Material Type											
Corrugated Cardboard	0	0	0	0	0	6,336	6,521	6,712	6,909	7,111	7,319
Newsprint	0	0	0	0	0	180	185	190	196	202	208
Mixed Paper	0	0	0	0	0	1,258	1,295	1,333	1,372	1,412	1,453
High Grades	0	0	0	0	0	744	766	789	812	835	860
Glass	0	0	0	0	0	30	31	32	33	34	35
Non-Ferrous	0	0	0	0	0	60	62	63	65	67	69
Ferrous	0	0	0	0	0	3,235	3,330	3,428	3,528	3,631	3,737
Total Quantity Diverted (tpy)	0	0	0	0	0	11,844	12,190	12,547	12,914	13,292	13,680
Total Diversion (%)	0%	0%	0%	0%	0%	7%	7%	7%	7%	7%	7%

NOTES:

1. Estimated wastestream growth rate: 2.9% ; based on the Solid Waste Generation Study (SWGS), page 5-3-R.

4.4.3 METHODS OF HANDLING AND DISPOSAL

Curbside Collection

The City has the option of collecting recyclables from the curb either in separate containers on a weekly basis or commingled in containers that can be picked up by the City's automated collection trucks. The collected materials are then brought to the a processing facility to be prepared for markets. Any residuals from processing would be disposed at the Santa Maria Landfill.

Buyback Collection

Residents and businesses transport materials to one of the numerous buyback centers (Health Sanitation, Valley Recycling, Coastal Recycling, Vocational Training) where materials are purchased sorted, processed and transported to markets.

Commercial/Industrial Recycling

The City (or its contractor) will identify commercial generators that produce large amounts of recoverable materials (e.g., corrugated cardboard, high grade paper etc.). These generators will be targeted for a source separated commercial/industrial recycling program. Participating businesses will set out materials in separate containers for collection. These materials, which might include corrugated cardboard, high grade paper, aluminum, ferrous metals, plastic and glass, will be transported to a processing facility to be prepared for markets. This program could be expanded to a "wet/dry" system whereby commercial/industrial solid wastes would be collected in containers in two categories: 1) mixed recyclables (paper grades, metals, containers); and, 2) everything else (food wastes, mixed plastic, contaminated paper etc.) These materials would be hauled in to a processing facility for separation. Any residuals from processing would be disposed of at the Santa Maria Landfill.

Multi-Family Recycling

In this program, participating multi-family housing residents place materials in special containers located in or near the existing dumpster enclosures. These materials are loaded onto a truck and transported to an processing facility to be prepared for markets.

Yard and Wood Waste Mulching

In this program, segregated loads of yard and wood wastes will be delivered to a designated collection area at the Santa Maria Landfill. The collected materials will be shredded and screened (as necessary) to produce a mulch product for a variety of landscaping purposes. This program can be efficiently combined with processing wood and yard waste for fuel markets.

Mixed Waste Processing

In this system, mixed loads of commercial, industrial and residential discards are transported to a specially designed processing facility. The loads are dumped on a floor where bulky items such as appliances and cardboard are removed for recycling. The remaining waste is pushed by a tractor onto a conveyor where it is processed to recover recyclables by both automated and manual means. Recyclable materials are further processed and prepared for marketing. Compostable materials removed through this process are directed to the adjacent compost area. Residuals from mixed waste processing would be disposed of at the Santa Maria landfill.

4.4.4 FACILITIES TO BE UTILIZED

Curbside Recycling

Curbside materials processing will require access to a processing facility to prepared the materials for markets. There are currently limited processing capabilities available to the City. The mixed waste processing facility selected for implementation during the short-term could provide the necessary additional processing capabilities.

Buyback Collection

Expansion of buyback/drop-off activities will occur at the existing buyback sites as market conditions allow. Expansion will also depend upon the availability of space and processing equipment.

Commercial Source Separation

Commercial source separated collection will require access to intermediate processing capabilities to prepare recovered materials for market.

Multi-Family Recycling

Multi-family recycling will require access to intermediate processing or mixed waste processing capabilities to prepare recovered materials for markets.

Mixed Waste Processing

Mixed waste processing of Santa Maria's wastestream to remove recyclables and produce compost will require access to a mixed waste processing facility. There is presently no such facility available to process mixed waste within the City or the County unincorporated area. A regional facility has been selected for implementation in the Santa Maria wasteshed by each of the jurisdictions in the planning area.

Yard and Wood Waste Mulching

Mulch production will be carried out at the Santa Maria landfill in conjunction with fuel production activities.

4.4.5 LIST OF ANTICIPATED MARKETS FOR RECOVERED MATERIALS

Materials Recovered

Anticipated Markets

SOURCE SEPARATED AND MIXED WASTE RECOVERY

Corrugated Cardboard	Willamette, Oxnard, CA (End User)
High Grade/Mixed Paper	Yao Yang, Los Alamitos, CA (Exported) Western Pulp & Paper, Downey, CA (Exported) Berg Mills, West Hollywood, CA (Exported)
Magazines	Smurfit, Los Angeles (Used Domestically) CR&R, Stanton, CA (D & E) ¹
Newsprint	Smurfit, Pomona, CA (End User)
Glass	CR&R, Stanton, CA (Used Domestically, Some Export) Owens-Illinois, Vernon, CA (End User)
PETE	Plastic Recycling Corp, West Hollywood, CA (D & E)
HDPE	Smurfit, Los Angeles, CA (Export) Partek, Vancouver, B.C. (End User)
Aluminum Cans	Ralco, Nipomo, CA (D & E) CR&R, Stanton, CA (D & E) Alpert & Alpert, Los Angeles, CA (D & E) IPS, Fresno, CA (D & E)
Ferrous Metals	Oxnard Metals, Oxnard, CA (D & E)
Scrap Aluminum	Santa Barbara Iron, Santa Barbara, CA (D & E) Oxnard Metals, Oxnard, CA (D & E)

YARD AND WOOD WASTE MULCHING

Mulch Products	City Parks and Maintenance Departments, Residents, Commercial Landscapers, California DOT.
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4.4.6 MEASURES TO ADDRESS ADVERSE MARKET CONDITIONS

In the event of adverse market conditions for any of the materials recovered in City programs, it is recommended that the following measures be taken as necessary:

1. Market the materials for lower value end-uses such as the production of glassphalt with mixed cullet, or the production of animal bedding with mixed paper;
2. Temporarily store the recovered materials until market conditions improve;
3. Temporarily dispose of the materials at the landfill until local, state-wide and national market development efforts improve secondary materials markets.

¹ D & E means the materials are used both domestically and exported.

4.5 IMPLEMENTATION OF RECYCLING PROGRAMS

4.5.1 RESPONSIBILITY FOR IMPLEMENTATION

Implementation of the alternatives selected will be carried out by the City of Santa Maria, City of Guadalupe, City of Solvang and the County of Santa Barbara (to the degree that these jurisdictions wastes are directed to the mixed waste processing facility), and the private sector. The City of Santa Maria, Public Works Department, (through contractors where applicable) will be responsible for implementing the selected programs. The City of Santa Maria will be responsible for developing and adopting any policies (i.e., recycled materials procurement policy, anti-scavenging ordinance(s)) which protect and promote recycling activities.

4.5.2 IMPLEMENTATION TASKS AND SCHEDULE

Curbside Recycling

<u>Implementation Tasks</u>	<u>Date</u>	<u>Description</u>
Task 1	7/91	Curbside collection begins pursuant to contract with private contractor.
Task 2	Ongoing	Conduct annual monitoring and evaluation.

Expanded Buyback

No specific implementation tasks are proposed because buyback facilities are privately operated and not subject to City control. The City will act to facilitate any expansions to the extent of its ability.

Commercial Source Separation

<u>Implementation Tasks</u>	<u>Date</u>	<u>Description</u>
Task 1	1/92	Evaluate results of existing programs and pilots conducted in the City or the County.
Task 2	3/92	Conceptually design a commercial recycling collection system and release RFPs if necessary.
Task 3	6/92	Select private contractors for collection services as necessary.
Task 4	9/92	Implement expanded commercial recycling collection.
Task 5	Ongoing	Conduct annual monitoring and evaluation.

Multi-Family Recycling

<u>Implementation Tasks</u>	<u>Date</u>	<u>Description</u>
Task 1	1/92	Evaluate data from multi-family collection pilots and RALCCO's services.
Task 2	3/92	If necessary, determine and establish contract arrangements for full-scale multi-family recycling.
Task 3	6/92	Budget for full-scale multi-family recycling program.
Task 4	9/92	Begin phasing-in full-scale recycling collection service for multi-family housing.
Task 5	Ongoing	Conduct annual monitoring and evaluation.

Mixed Waste Processing Facility

The tasks in this alternative will be conducted in a regional effort by Santa Maria, Guadalupe, Solvang and Santa Barbara County.

<u>Implementation Tasks</u>	<u>Date</u>	<u>Description</u>
Task 1	1/92	Participants begin scoping the configuration and capacity of a facility serving Santa Maria, Guadalupe, the County unincorporated area and Solvang.
Task 2	6/92	Participants conceptually define facility and institutional arrangements.
Task 3	6/92	Prepare an inter-jurisdictional agreement for the facilities development with Santa Maria, Solvang, Guadalupe and the County.
Task 4	9/92	Participate in the preparation of Requests For Proposals (RFP), Architectural and Engineering Services or other facility procurement/design arrangements.
Task 5	1/93	Conduct CEQA determinations and begin facility siting and permitting process.
Task 6	1/94	Complete siting and permitting processes.
Task 7	1/94	Begin facility construction.

Task 8	6/94	Test facility performance.
Task 9	9/94	Begin full-scale facility operations.
Task 10	Ongoing	Conduct annual monitoring and evaluation.

Yard and Wood Waste Mulching

<u>Implementation Tasks</u>	<u>Date</u>	<u>Description</u>
Task 1	1/92	Determine program configuration, market potential, permitting requirements and equipment needs.
Task 2	6/92	Set up processing area at landfill as necessary.
Task 3	9/92	Begin program
Task 4	Ongoing	Conduct annual monitoring and evaluation.

4.5.3 RECYCLING COMPONENT IMPLEMENTATION COSTS

The following section contains cost estimates for implementation of the selected recycling programs in the City. It should be understood that these costs are for general planning purposes only and that actual costs will be known only as programs are implemented.

Curbside Recycling

The annual operations and maintenance costs associated with a residential source separated or commingled curbside program should be in the range of \$1.50 to \$2.00 per household per month depending on the collection system and the value of the collected recyclables. Assuming a service area of approximately 12,000 households, the cost of the curbside collection program will be between approximately **\$215,000 and \$290,000 per year.**

Commercial Source Separation

Commercial collection and processing costs depend upon the method of collection and processing capabilities. The estimated cost of collecting source separated commercial materials is typically in the range of \$30 - \$50/ton before revenues. It is estimated that the City could divert an additional 2500 tons per year (tpy) of commercial and industrial recyclables. Based on these assumptions, it is estimated that implementation of expanded commercial and industrial recycling will cost between **\$75,000 and \$125,000** annually (before revenues from recovered materials).

Multi-Family Recycling

Multi-family recycling is currently being piloted in both the City of Carpinteria and the City of Santa Barbara. Santa Maria could use data from the pilot programs to develop an appropriate collection system for multi-family recycling. Once this system has been configured, the specific program costs can be identified. Assuming \$1.00 per apartment unit served per month (about 7400 units including mobile homes), the approximate program cost will be **\$90,000 per year.**

Yard and Wood Waste Mulching

The estimated cost of mulching operations before revenues is \$15-\$20/ton. It is estimated that the City of Santa Maria will receive approximately 3500 tpy of mulchable yard and wood waste at the Santa Maria Landfill Drop-Off (see the Composting Component for Drop-Off discussion). Based on these assumptions, the estimated costs of mulching is **\$52,000 - \$70,000** per year before revenues.

Mixed Waste Processing

Mixed waste processing will be carried out at an Integrated Diversion Facility (IDF) serving the City of Santa Maria, Guadalupe, Solvang and the County Unincorporated area (i.e., the entire Santa Maria watershed). As indicated in the implementation section of this plan, a detailed feasibility analysis and procurement process will be conducted for the IDF during the short-term planning period. Based on the waste disposal projections in the Solid Waste Generation Study for the year 2000 for the City of Santa Maria, Guadalupe, Solvang and the County Unincorporated area, it is estimated that the design capacity of an integrated diversion facility with mixed waste processing and composting capabilities would need to be approximately 500 tons per shift (tpd) (i.e., capable of processing about 65 tons per hour). An IDF in this size range can be expected to have capital costs in the range of \$40,000 to \$60,000 per ton of daily capacity and annual

operations and maintenance costs of \$20 to \$40 per ton of daily throughput. Thus, capital costs will range from \$20,000,000 to \$30,000,000 and annual operations and maintenance costs will range from approximately \$3,000,000 to \$6,000,000.²

A mixed waste processing facility without composting capabilities can be expected to have capital costs in the range of \$15,000 to \$25,000 per ton of daily capacity and annual operations and maintenance in the range of \$20 to \$40 per ton of daily throughput. Thus, capital costs will range from \$7,500,000 to \$12,500,000 and annual operations and maintenance costs will range from approximately \$3,000,000 to \$4,500,000.

4.5.4 REVENUE SOURCES

The City of Santa Maria's solid waste management system has been traditionally funded through refuse collection fees and tipping fees at the Santa Maria Landfill. Other potential funding sources include revenue from recovered materials and compost products, fees on undeveloped parcels, and grants from State agencies such as the California Department of Conservation. See the Funding Component of this plan for a detailed discussion of available and potential funding sources.

4.5.5 ACTIONS TO DETER UNAUTHORIZED REMOVAL OF RECYCLABLES

The City will insure that there is an enforced scavenging ordinance in the municipal code which enacts penalties for the unauthorized removal of recyclables from public and private recycling programs.

² These cost estimates are planning level estimates which are necessarily based on a number of broad assumptions. The actual costs will vary based on site selection, facility specifications, and other specific conditions.

4.6 MONITORING AND EVALUATION

The AB 939 regulations require each jurisdiction to identify how each selected program will be monitored and evaluated during implementation. Monitoring includes quantifying diversion from selected alternatives and identifying shortfalls in the attainment of the objectives adopted in this Component.

Note: Article 6.2, Section 18733.6 (a) (4) of the AB 939 Regulations requires the City to obtain prior written approval of this monitoring and evaluation methodology by the CIWMB.

4.6.1 METHOD TO MONITOR SELECTED RECYCLING PROGRAMS

Recycling activities in the City will be monitored and evaluated using an **annual reporting system**. All organizations providing recycling activities which can be counted towards AB 939 diversion requirements will be asked to submit specific information pertaining to quantities and composition of materials collected on a reporting system to be agreed upon. This system will record recyclables by type and tonnage. At the end of each fiscal year a Recycling Program Monitoring and Evaluation Report will be completed by City staff.

The Recycling Program Monitoring and Evaluation Reports will contain the following:

1. a brief summary of the Recycling programs being implemented in the area affected by the report and the schedules for any programs in planning and/or development;
2. a brief discussion of progress towards the Objectives established for the Recycling Component;
3. a short evaluation of the recycling programs in terms of the evaluative criteria listed in this section (see below); and,
4. if a shortfall in the attainment of Recycling Component Objectives is identified, a special section of the report will be compiled which summarizes the shortfall(s) in terms of the list contained at the end of this section.

4.6.2 CRITERIA FOR PROGRAM EVALUATION

The regulations require the establishment of specific criteria for evaluating program effectiveness. The following criteria will be the basis for evaluating the effectiveness of the selected alternatives:

1. Quantity of materials diverted from landfill disposal, expressed in tons or cubic yards and as a percentage of the total waste stream for each recycling activity.
2. Participation rates (residential curbside, commercial collection, and multi-family recycling)
3. The costs of collection and processing; and,
4. The marketability of materials recovered through City programs.

4.6.3 AGENCIES RESPONSIBLE FOR MONITORING AND EVALUATION

The City of Santa Maria Public Works Department will be responsible for collecting data on the source separated collection programs implemented in the City. The City of Santa Maria Public Works Department will also be responsible for monitoring City tonnage received and diverted from the proposed IDF facility and providing that data to the other participating jurisdictions.

Curbside and buyback diversion rates will be compiled by the operators of these programs on a quarterly and annual basis following the reporting protocol established by the City. Commercial and multi-family diversion will be handled in a similar manner. Mulch diversion rates will be measured by the City landfill operators. Standardized reporting will be made a condition for all recycling related contracts for the City.

4.6.4 MONITORING AND EVALUATION COSTS AND FUNDING SOURCES

Monitoring and evaluation costs will be a shared responsibility of the City and the recycling contractors performing the selected recycling function. The costs of monitoring and evaluation will be funded by tip fees or other adopted funding mechanisms prorated to reflect participating jurisdictions's fair share. Revenue sources and funding are discussed in detail in the Funding Component.

4.6.5 MEASURES TO BE IMPLEMENTED IN THE EVENT OF A SHORTFALL

The regulations require each jurisdiction to identify measures to be implemented if monitoring shows a shortfall of the Recycling Component objectives or of the diversion mandates specified in Public Resources Code, Section 41780.

In the event the monitoring and evaluation reports reveal a shortfall in the attainment of program objectives or diversion requirements the City will compile a brief special section to be included in the annual Recycling Program Monitoring and Evaluation Report to be submitted to the local Solid Waste Task Force, the CIWMB, and the City Council identifying the following:

1. Factors causing the shortfall;
2. Potential measures to off-set the shortfall in program objectives or inability to attain necessary diversion rates. These measures may include, but are not limited to: increased promotion and public information, increased market development and revision of component objectives.

CHAPTER 5

COMPOSTING COMPONENT

5.0.1 INTRODUCTION

This Composting Component establishes objectives for the City of Santa Maria, describes existing compost activities, evaluates composting collection and processing alternatives, recommends a composting system, and establishes a ten-year program implementation schedule. This component also identifies implementation responsibility, estimates program costs, lists potential revenue sources and proposes a monitoring and evaluation system. The structure of this component follows the Model Format required by the AB 939 Regulations. The following list summarizes the composting program selected for implementation in the City of Santa Maria:

5.0.2 SUMMARY

Short-Term Planning Period (1991-1995)

- Participate with other jurisdictions in the region in planning a **composting facility** to be completed in the medium-term, serving the City of Santa Maria, the City of Guadalupe, the City of Solvang and the surrounding County Unincorporated area in conjunction with the mixed waste processing facility to be developed in the short-term. This facility could be developed as a future phase of the mixed waste processing facility selected in the Recycling Component for the short-term.
- Participate with other jurisdictions in the region in the establishment of a **drop-off site at the Santa Maria Landfill** for yard waste, and wood waste serving the City of Santa Maria, the City of Guadalupe, the City of Solvang and the surrounding County Unincorporated area. This will be used for mulch and fuel production in the short-term and composting in the medium-term.
- Adopt **fee incentives** to encourage commercial, agricultural, and residential generators from participating jurisdictions to bring clean loads of yard, agricultural, and wood waste segregated from other wastes to the Santa Maria Landfill drop-off site.
- Conduct a local compost (and mulch) product **market development** program emphasizing landscape and agricultural uses of the municipally produced compost and mulch products.

Medium-Term Planning Period (1996-2000)

- Establish a **curbside yard waste collection** program for single-family households and **composting facility becomes operational**.

5.0.3 BACKGROUND

AB 939 defines composting as a method of waste treatment in which organic solid wastes are biologically decomposed under controlled aerobic or anaerobic conditions. This process results in a stable, disinfected and decomposed material which can be sold or distributed as a soil amendment which can be used for improving soil texture, air and water absorption capacity and erosion control.

As a waste diversion method, composting provides an opportunity to substantially reduce the volume of yard waste and other organic materials that are currently landfilled. The City of Santa Maria has a significant amount of yard waste and other compostable materials in its wastestream. Wood waste may also be included in the compost process, although it may be more cost effective to produce mulch, animal bedding or fuel products with these materials. It should be noted that any materials diverted from disposal through mulching would be considered recycling under the AB 939 Regulations.

Yard waste, food waste, wood waste and other compostable materials can be collected in a source separated fashion (curbside collection or drop-offs) or, they can be removed from the wastestream at a mixed waste processing facility. Source separated materials are typically clean of contaminants (such as glass, plastic and metals); this reduces the cost of processing the materials and usually results in a more marketable compost product. However, waste drop-off sites may be the least expensive means of recovering clean yard waste, while curbside yard waste collection may be the most effective means of recovering clean yard waste.

Composting is often conducted at or near the municipal landfill due to the cost and environmental benefits of short transportation distances for compost feedstocks and residuals to be disposed. In addition, landfills and composting facilities are generally considered compatible land-uses, which minimizes local opposition to facility siting based on concerns such as dust, odors and vehicle traffic. Further, some local governments have been able to reduce costs by using landfill staff and equipment for some compost facility needs.

The EPA estimates that there are between 800 and 1000 yard waste composting facilities in the U.S. The most common method of yard waste composting uses windrows (long parallel piles 15-25 ft. wide and 10-12 ft. high) to cure the compostable materials. Pre-processing of the yard waste helps prepare the materials for maximum biological activity and decomposition. The pre-processing typically includes grinding and screening. Once formed, the windrows are periodically turned to provide oxygen to the aerobically decomposing piles; this is accomplished with either a front-end loader or a specialized windrow turner. Turning frequency depends on a number of factors including climate, types of feedstock materials, and windrow size. Water must also be applied to the composting materials to maintain the decomposition process and control dust.

Composting can also be accomplished in closed systems in which materials are composted in an enclosed silo, bin, or vessel which has either built-in turning machinery or moves materials through the system in a plug-flow manner. Closed systems provide greater ability to control the decomposition process (and thus, factors such as decomposition rates and odors). This type of composting facility also requires significantly less land than an open windrow system.

Wastewater sludge can be combined with yard wastes and other compostable organic materials to produce a high quality compost end-product. The addition of sewage sludge to a composting system has numerous benefits including: production of a high quality finished compost product, improved processing effectiveness for high carbon materials (brush, wood waster, yard waste),

elimination or significant reduction of supplemental water needs, and a reduction of disposal problems associated with wastewater sludge. A 1989 Biocycle survey of sludge composting facilities found that 119 sludge composting are in operation in the U.S. and another 58 are either in advance planning stages or under construction. The current regulatory interpretation states that co-composted sludge and yard waste would not be creditable towards the AB 939 diversion mandates. However, the California Integrated Waste Management Board (CIWMB) is expected to reconsider allowing these materials to count in the near future.

There are about 10 mixed waste composting systems operating in the U.S. in sizes ranging from 5 to 1000 tons per day (tpd). In mixed waste composting systems, the organic fraction of the mixed wastestream, including yard waste, food waste, mixed paper, and other organic materials, are separated from non-compostable materials in the wastestream, such as metals, glass and plastics. This can be achieved using modified collection procedures, automated processing techniques at a processing facility, or through a combination of these methods.

Some non-compostable materials typically end up in the final compost product, such as pieces of glass and plastic. Although contamination from these materials will not necessarily effect the use of the product, it will undoubtedly effect the marketability of the final product. One of the primary problems with mixed waste composting is finding and developing viable markets for the finished compost product. This problem may be exacerbated in California by the lack of regulations governing compost feedstocks and end products.

The development of markets, particularly local ones, for the final compost products is crucial to the success of any composting system. Potential end-use markets for compost products include commercial landscaping, home and garden use, agriculture, public facilities (i.e., parks and recreation facilities), land reclamation, and landfill cover. Consistent quality as well as consistent availability is critical in determining the marketability of compost.

In general, the jurisdictions involved in a composting facility should not expect to generate the revenues that commodities like aluminum, high grade paper and other recyclable materials are capable of producing. The sale of compost products can only be expected to partially offset compost facility operating costs. Gross revenues for yard waste compost products exhibit a wide range: from \$0 to \$25/ton for an especially high grade product that meets a targeted end-use market. Recent legislation (SB 1322) creates new markets for compost by requiring virtually all state agencies to develop plans for the utilization of compost and mulch produced from yard waste and other materials diverted from the wastestream. State procurement requirements for compost are expected to begin to take effect in two to three years, particularly from agencies such as California Department of Transportation (Caltrans).

5.1 COMPOSTING COMPONENT EXISTING CONDITIONS

City of Santa Maria

There are currently no municipal or private composting activities underway in the City of Santa Maria. However, the City has been pilot-testing a wood and green waste chipping operation at the landfill. A tub grinder has been brought to the landfill on two occasions and chipped materials for transport to fuel markets. Although this is considered "transformation" which is not countable towards the AB 939 25 percent diversion mandate, this activity may count towards up to 10 percent of the 50 percent requirement under strict environmental criteria.

City of Guadalupe

There are currently no municipal or private composting activities underway in the City of Guadalupe.

City of Solvang

There are currently no municipal or private composting activities underway in the City of Solvang.

Unincorporated Santa Barbara County

The County of Santa Barbara Waste Generation Study identified Valley Compost and Topsoil (Santa Ynez, Calif.) as the only composting operation in the County. Commercial agricultural crop residues and manure are used to produce fertilizer and soil amendments.

Additionally, the Community Environmental Council (CEC) has conducted a Mini-Compost Digester Project. The purpose of the study is to determine the feasibility of composting various components of the County's wastestream. Two-ton samples of materials are being composted in a mini-compost digester. The free standing vessel imitates full-scale European compost plant, which processes about 200 tons of organic material a day. Currently, three combinations of waste are being tested: municipal solid waste (MSW) only, MSW and sewage sludge and yard waste only. All combinations are being chemically tested and analyzed for soil enhancement qualities.

A preliminary market study was also conducted by CEC in December 1988 which revealed a significant amount of local interest in purchasing compost products. The report addressed issues concerning the volumes of compost that different market sectors utilize, the need for chemical and physical testing prior to large scale production and potential compost procurement by local governments, nurseries and farmers.

5.2 COMPONENT OBJECTIVES

The AB 939 Regulations require each jurisdiction to adopt short- and medium-term objectives for composting activities. The following objectives are based on local conditions, input from the LTF and City staff and the composting programs selected in this component.

Short-Term Objectives (1991-1995)

1. To participate in the cooperative regional development of a composting facility to be fully operational in the medium-term planning period.
2. To develop municipal composting capabilities in a cost effective manner by integrating composting with other recycling collection and processing activities in the City.

Medium-Term Objectives (1996-2000)

1. To divert at least 50 percent of all yard waste from disposal through composting activities by January 1997.
2. To target organic materials such as food waste, other paper and other organic materials for composting in the residential and commercial wastestreams to help achieve the State mandated 50 percent diversion goal.

Short and Medium-term Market Development Objectives (1991-2000)

1. To develop and expand local public and private sector markets for compost products produced through municipal composting programs.
2. To facilitate the use of locally produced compost and mulch products by municipal agencies in public parks, civic centers and other facilities.
3. To develop a range of compost and mulch products specifically produced to meet market needs.
4. To develop community education programs emphasizing the beneficial uses of compost and mulch products.

Priority Waste Types

The AB 939 Regulations require each jurisdiction to identify specific waste types as priorities for waste diversion. The jurisdictions may select priority wastes based on criteria such as volume of the solid waste, weight of the solid waste, hazard of the solid waste, non-renewability of the materials that compose the solid waste, or any other relevant selection criteria.

Priority Wastes

Yard Waste
Wood Waste
Agricultural Waste
Food Waste
Other Organics

Criteria/Rationale

Large percentage of the wastestream volume.
Large percentage of the wastestream volume.
Large percentage of the wastestream volume.
Large percentage of the wastestream volume.
Large percentage of the wastestream volume.

5.3 EVALUATION OF COMPOSTING ALTERNATIVES

The alternatives evaluated in this component have been divided into three categories: processing alternatives, collection alternatives and policy alternatives. The following section present a brief description of each alternative evaluated.

5.3.1 DEFINITION OF COMPOSTING ALTERNATIVES

Processing Alternatives

1. Yard Waste Composting

In this alternative one or more facilities would be developed which accept mixed yard waste, including leaves, grass, brush, prunings and other green waste for processing into marketable compost products. In addition, this facility would also accept wood waste. The wood waste would be processed to produce compost, mulch materials, fuel and other useful products.

2. Mixed Organics Composting

In this alternative a facility would be developed which would accept both source separated organic materials as well as mixed solid waste to recover compostable organic materials and process them into marketable compost products. This type of facility would use manual and automated means to remove non-compostable materials (plastics, metals, glass, etc.) from the incoming stream, leaving the organic fraction (food wastes, plant material, paper and other miscellaneous organic materials) for further processing into a stable compost end-product which can be used as a soil conditioner, organic fertilizer or cover material. This alternative could be developed as a future phase of a mixed waste processing facility (i.e., for recovery of recyclable materials).

3. Co-Composting of Yard Waste with Sewage Sludge

In this alternative a facility would be developed for composting a combination of yard waste materials and sludge from wastewater treatment plants. This process would produce a stable compost end-product which can be used as a soil conditioner, organic fertilizer or cover material.

Collection Alternatives

1. Curbside Collection of Yard Waste

Yard waste would be collected from residential generators, receiving waste collection separately from mixed wastes. Collected yard waste would then be transported to a composting facility for processing.

2. Drop-Off Sites for Yard Waste

Designated tipping areas would be established for clean loads of yards waste from residential and commercial generators at transfer stations and landfills. These drop-off areas would be supervised by landfill/transfer station staff. Yard waste collected through these drop-off sites would be periodically transported to a composting facility for processing.

3. Satellite Yard Waste Drop-Offs

In this alternative, one or more satellite drop-off sites would be established within the jurisdiction for commercial and residential generators to drop their yard wastes. These drop-off sites could be mobile and would be supervised to prevent illegal dumping and contamination. The materials collected at the drop-off sites would be periodically transported to a composting facility for processing into mulch or compost products.

Policy Alternatives

1. Fee Incentives for Clean Loads of Yard Waste

In this alternative, fee incentives would be provided at the landfill or transfer station which encourage both residential and commercial generators to bring in clean loads of yard waste (i.e., free of other solid waste materials). Tipping fees could be significantly reduced or waived for all clean loads of yard waste. This would increase the effectiveness of yard waste drop-offs at the landfill or transfer station.

2. Mandatory Separation of Yard Waste

In this alternative, self-haul generators who haul their yard waste materials directly to the landfill or transfer station would be required to bring these materials segregated from other waste materials. This would increase the effectiveness of yard waste drop-offs at the landfill/transfer station.

3. Yard Waste Landfill Disposal Bans

In this alternative yard waste would be banned from disposal at the landfill and transfer station. All yard waste would be required to be separately collected or dropped off for processing at a special drop-off or composting facility.

5.3.2 DEFINITION OF EVALUATIVE CRITERIA AND DISCUSSION TOPICS

This section defines the six criteria and four evaluative discussions that will be used to evaluate the recycling alternatives being considered by the City. The regulations pursuant to AB 939 require that at minimum six criteria be used to evaluate composting alternatives (#1-#6 below) and that there be discussion of four issues (#7-#10 below).

EVALUATIVE CRITERIA:

1. **Reduction Effectiveness:** The effectiveness of the alternative in reducing either solid waste volume, weight, percentage in weight or its volumetric equivalent.
2. **Potential Hazards:** The alternative's potential for environmental or human health/safety impacts.
3. **Ability to Accommodate Changing Economic, Technological, and Social Conditions:** The alternative's ability to accommodate changes in economic, technological and social conditions, such as having a flexible technology that can adapt to changing market needs.
4. **Consequences on Wastestream:** How implementation of the alternative will impact the wastestream, including the types of waste that would be reduced in the stream, as well as the alternative's potential to result in negative consequences, such as shifting the solid waste generation from one type of solid waste to another.
5. **Ease of Implementation:** The time required to implement the alternative.
6. **Facility Needs:** The need for new facilities or facility expansion to implement the alternative. For example, an alternative that could make use of existing equipment and systems would have fewer facility needs.

EVALUATIVE DISCUSSIONS:

7. **Consistency with Local Policies, Plans, and Ordinances:** The consistency of the alternative with local policies, plans, and ordinances.
8. **Institutional Barriers to Implementation:** The existence of institutional barriers, such as permitting requirements, to the alternative. This criterion would include consideration of public acceptance, private sector acceptance, impact on jobs, and compatibility with the existing waste management infrastructure.
9. **Costs in Short and Medium-term:** The estimated cost of implementing the alternative.
10. **End-uses/Market Availability:** The availability of end-uses or markets for the materials/products produced.

5.3.3 EVALUATION ALTERNATIVES

PROCESSING ALTERNATIVES

EVALUATIVE CRITERIA

Effectiveness

Yard Waste Composting:	Effective means of diverting yard waste and some wood wastes. This alternative can typically divert between 5 and 15 percent of the wastestream.
Mixed Organics Composting:	Effective means of diverting organic fraction of the wastestream, including yard wastes, food wastes, some wood wastes, and other miscellaneous organic materials. A typical facility of this type would divert from 10 to 25 percent of the wastestream.
Co-Composting w/Sewage Sludge:	Effective means of diverting yard waste and some wood waste as well as sludge from wastewater treatment facilities. Diversion potential similar to yard waste composting.

Hazards

Yard Waste Composting:	Yard waste composting facilities can potentially produce air quality hazards from dust and particulates, odors, water pollution from run-off and worker safety hazards from heavy equipment and facility operation.
Mixed Organics Composting:	Hazards similar to yard waste composting. In addition there may be potential hazards from contaminants in compost product such as household hazardous materials.
Co-Composting w/Sewage Sludge:	Hazards similar to yard waste composting. There may be risk of contaminants from metals and chemicals emanating from the municipal sludge. Pretreatment programs combined with close monitoring and testing by the Sanitation Districts greatly reduces this risk.

Ability To Accommodate Change

Yard Waste Composting:	Yard waste composting is a relatively flexible alternative. These facilities can be expanded or reduced in scope. Operational changes will accommodate increases in quantities or changes in the wastestream.
Mixed Organics Composting:	Facility designs are typically more complex than yard waste composting facilities, and may be more difficult to modify to accommodate changing conditions. However, these types of facilities tend to be more versatile than yard waste composting facilities to begin with, often incorporating capabilities such as materials recovery.

Co-Composting w/Sewage Sludge:	Ability to accommodate change similar to mixed MSW composting alternative.
<u>Consequences on Wastestream</u>	
Yard Waste Composting:	Will reduce the quantities of yard waste and wood waste in the disposed wastestream.
Mixed Organics Composting:	Will reduce the quantities of yard waste, wood waste, food waste, paper and other miscellaneous organic materials in the disposed wastestream.
Co-Composting w/Sewage Sludge:	Will reduce the quantities of yard waste, wood waste and sewage sludge in disposed wastestream.

Time Frame for Implementation

Yard Waste Composting:	May be implemented in the short or medium-term period.
Mixed Organics Composting:	May be implemented in the short or medium-term period.
Co-Composting w/Sewage Sludge:	May be implemented in the short or medium-term period.

Need For Facilities

Yard Waste Composting:	Will require a facility. May be developed in conjunction with other facilities such as a mixed waste processing facility.
Mixed Organics Composting:	Will require a facility or may be part of an expanded facility.
Co-Composting w/Sewage Sludge:	Will require a facility or may be part of an expanded facility.

EVALUATIVE DISCUSSIONS

Consistency With Local Policies

The development of a **yard waste composting, mixed organics composting and/or co-composting** facility is not specifically inconsistent with any local plans, policies and ordinances. A compost facility developed at or adjacent to the landfill currently used by the City would not be inconsistent with existing land-use and zoning regulations. Other potential facility sites may be inconsistent with local land-use restrictions. The development of a compost facility would require a California Environmental Quality Act (CEQA) determination, and the fulfillment of state and local facility permitting requirements.

Institutional Barriers

Potential institutional barriers for **yard waste composting, mixed organics composting and co-composting** include state and local permitting requirements, existing solid waste franchise agreements, siting constraints and environmental documentation requirements as well as applicable zoning and land-use regulations.

Implementation Costs

The costs of **yard waste composting** varies significantly based upon the types of processing technology utilized. In the simplest type of composting system, long piles of ground yard waste materials are formed using a front-end loader. The windrows are kept wet (often using a water truck borrowed from the landfill) and are turned periodically. Typically, the final compost product is screened prior to marketing. As the complexity of the yard waste composting facility increases (adding equipment such as grinders, aeration systems, screens and windrow turners), the capital costs increase. However, the added processing capability typically reduces the cost/ton as equipment is more efficiently utilized and economies of scale are realized. Based on the costs of planned and existing facilities, capital costs for this type of facility range between \$15,000 and \$30,000/ton of capacity/day. Annual operations and maintenance (O&M) costs for relatively low-technology yard waste composting systems range between about \$8 and \$15/ton of capacity/day.

The costs of **mixed organics composting** facilities also vary significantly depending on a variety of factors such as the type of facility (in-vessel vs. windrow), and the degree of front-end processing (to recover recyclables or remove certain materials). An in-vessel system (which provides more process and odor control than a windrow system) with some front-end processing might have capital costs in the range of \$40-\$60,000/ton of capacity/day, and annual O&M costs of \$20-\$30/ton of capacity/day. The costs of **co-composting yard waste and sewage sludge** using similar in-vessel technology are comparable to the costs of mixed organics composting.

Market Availability

Potential end-use markets for compost products include commercial landscaping, home and garden use, agriculture, public facilities (i.e., parks and recreation facilities) and landfill cover. Consistent quality, as well as consistent availability, are critical in determining the marketability of compost products. Organic waste from previously mixed MSW usually contains small pieces of glass, plastics and other objects. Mechanical screening processes can remove a substantial portion, but not all of the contaminants in the final compost product. Compost produced from clean loads of yard waste alone are typically free of these types of contaminants. In general, the jurisdictions involved in a composting facility should not expect to generate the revenues that commodities like aluminum, high grade paper and other recyclable materials are capable of producing. The sale of compost products can only be expected to partially offset compost facility operating costs. Revenues for yard waste compost products exhibit a wide range: from \$0 to \$25/ton for an especially high-grade product that meets a targeted end-use market. Recent legislation (SB 1322) creates new markets for compost by requiring virtually all state agencies to develop plans for the utilization of compost and mulch produced from yard waste and other materials diverted from the wastestream. State procurement requirements for compost should be expected to begin to take effect in 2 to 3 years.

COLLECTION ALTERNATIVES

EVALUATIVE CRITERIA

Effectiveness

Curbside Collection of Yard Wastes:

Curbside collection of yard waste can be a very effective means of diverting residential yard wastes. Curbside collection of yard waste typically achieves between 50 and 90 percent participation. Curbside collection will not capture commercial and self-haul yard wastes.

Drop-Off Sites for Yard Wastes:

Drop-off sites typically achieve lower participation rates than curbside programs. Drop-offs located at landfills and transfer stations may achieve high participation rates.

Satellite Drop-Offs for Yard Waste:

The effectiveness of satellite drop-off sites depends on location. Satellite drop-off sites for yard waste are likely to have lower recovery rates than drop-off sites at landfills or transfer stations due to convenience factors.

Hazards

Curbside Collection of Yard Waste:

Will result in increased truck traffic and associated noise and air quality impacts.

Drop-Off Site for Yard Wastes:

May increase traffic at transfer stations and landfills. Potential for increased accidents.

Satellite Drop-Off Sites for Yard Waste:

Will result in increased traffic and associated noise and air quality impacts. Unsupervised drop-off sites may result in illegal dumping and load contamination.

Ability To Accommodate Change

Curbside Collection of Yard Waste:

Can be expanded or reduced in scope to accommodate changing conditions. Collection routes may be altered to accommodate changes in population or waste characteristics. Number and types of collection vehicles may be changed.

Drop-Off Sites for Yard Waste:

Easily expanded or reduced in scope to accommodate changing conditions. Number, size and location of drop-off sites may be modified.

Satellite Drop-Off Sites for Yard Waste:

Satellite drop-off sites are easily expanded or reduced in scope to accommodate changing conditions. Number, size and location of drop-off sites may be modified.

Consequences on Wastestream

Curbside Collection of Yard Waste:	Will decrease the quantities of waste in disposal composition profile.
Drop-Off Sites for Yard Waste:	Will decrease the quantities of waste in disposal composition profile.
Satellite Drop-Offs for Yard Waste:	Satellite drop-off sites for yard waste will decrease the quantities of yard waste in the disposal composition profile.

Time Frame for Implementation

Curbside Collection of Yard Waste:	May be implemented in the short- or medium-term. Schedule dependent on the development of processing capabilities.
Drop-Off Sites for Yard Waste:	May be implemented in the short- or medium-term. Schedule dependent on the development of processing capabilities.
Satellite Drop-Offs for Yard Waste:	May be implemented in the short- or medium-term. Schedule dependent on the development of processing capabilities.

Need For Facilities

Curbside Collection of Yard Waste :	Will require access to a processing facility.
Drop-Off Sites for Yard Waste:	May require expansion and modification of tipping areas at the landfill and transfer station.
Satellite Drop-Off Sites for Yard Waste:	Will require collection containers and one or more locations to place them.

EVALUATIVE DISCUSSIONS

Consistency With Local Policies

Curbside collection of yard waste and yard waste drop-off sites at the landfill/transfer stations, or satellite (mobile) collection sites are not inconsistent with all local plans, policies or ordinances. Potential sites for satellite/mobile yard waste drop-off sites in the community may require City review.

Institutional Barriers

Potential institutional barriers to curbside yard waste collection include existing franchise agreements for solid waste collection. These may have to be renegotiated in order to implement a modified collection system for yard waste/food waste generators. Siting of yard waste drop-off sites at any privately operated transfer or disposal sites will require agreement by the facility operator.

Implementation Costs

There are many factors which effect the costs of developing **curbside yard waste collection** systems including the type of collection program, the type of equipment used, the availability of existing equipment, labor costs, participation rates, institutional arrangements and other factors. Curbside yard waste collection programs in the range of \$60-80/ton are common (Biocycle, June 1989). The City of Seattle pays \$56-84/ton for a contractor to pick up yard waste depending on location. These cost ranges translate into costs on the order of \$2 - \$5 dollars/household serviced /month. Yard waste **drop-offs at landfills** and transfer stations can typically be carried out without significant additional expenditure. Typically, these drop-off sites require a special tipping area be designated at the landfill or transfer station for clean loads of yard waste and wood waste. This activity can usually be carried out without additional staff or equipment. Satellite yard waste drop-off sites will require mobile collection equipment (either a truck or roll-off debris box) and a supervisor to insure only designated materials are dropped off. Satellite drop-off sites can be placed at community parks, city yards and other existing public locations, avoiding site costs.

Market Availability

This criterion is not applicable to composting collection alternatives. See the evaluation of processing alternatives for a discussion of market availability.

POLICY ALTERNATIVES

EVALUATIVE CRITERIA

Effectiveness

Fee Incentives:	Fee incentives, such as reduction in tip fees for clean yard waste loads, are a very effective means of encouraging participation in yard waste separation.
Mandatory Separation of Yard Waste:	Requirements for mandatory separation can significantly increase participation rates which will increase the capture rate and diversion potential of the program.
Yard Waste Landfill Disposal Bans:	Similar to mandatory separation requirements except a disposal ban would increase capture rates from all yard waste generators (residential and commercial).

Hazards

Fee Incentives:	No hazards have been identified.
Mandatory Separation of Yard Waste:	May be difficult to enforce.
Yard Waste Landfill Disposal Bans:	May be difficult to enforce.

Ability To Accommodate Change

Fee Incentives:	Can easily accommodate change; policy may be modified or discontinued at any time.
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Mandatory Separation of Yard Waste:	Can easily accommodate change; policy may be modified or discontinued at any time.
Yard Waste Landfill Disposal Bans:	Can easily accommodate change; policy may be modified or discontinued at any time.
<u>Consequences on Wastestream</u>	
Fee Incentives:	Will increase yard waste diversion from commercial and residential generators who self-haul their waste to the transfer station or landfill.
Mandatory Separation of Yard Waste:	Will increase yard waste diversion from commercial generators.
Yard Waste Landfill Disposal Bans:	Will increase yard waste diversion from all generators.

Time Frame for Implementation

Fee Incentives:	May be implemented in the short- or medium-term.
Mandatory Separation of Yard Waste:	May be implemented in the short- or medium-term.
Yard Waste Landfill Disposal Bans:	May be implemented in the short- or medium-term.

Need For Facilities

Fee Incentives:	Although this criterion is not directly applicable, all compost policy alternatives assume drop-off and processing facilities exist.
Mandatory Separation of Yard Waste:	Criterion not applicable.
Yard Waste Landfill Disposal Bans:	Criterion not applicable.

EVALUATIVE DISCUSSIONS

Consistency With Local Policies

The enactment of special **fee incentives** to encourage residential and commercial haulers to bring clean loads of yard waste to the landfill separate from other waste is consistent with existing plans, policies and ordinances. Special fees for certain materials are standard practice at most landfills and transfer stations. **Mandatory separation by commercial generators and yard waste disposal bans** are inconsistent with local policies and would require the enactment of specific ordinances in order to implement them.

Institutional Barriers

Institutional barriers to **fee incentives, mandatory separation by commercial generators**

and landfill disposal bans for yard waste include the current lack of compost or mulch facilities which would accept the materials for processing. Without alternatives for diverting the yard waste materials, the yard waste diversion policies would not be feasible. Barriers to yard waste disposal bans include the lack of a separate collection infrastructure for residentially generated yard waste materials.

Implementation Costs

Implementation costs associated with enacting policies such as **fee incentives, mandatory separation requirements and landfill disposal bans** include staff time and administrative costs associated with developing and enacting the policy change, policy implementation monitoring costs, and any lost revenue from tipping fees that may have been charged from the yard waste if it had been disposed at the landfill. Given the possible range of staff time and administrative costs which could potentially be allocated to the implementation of these alternatives, it would be unrealistic and highly artificial to assign specific costs for this level of analysis.

Market Availability

This evaluative discussion does not apply to compost policy alternatives. See the market availability evaluative discussion of compost processing alternatives.

5.3.4 ALTERNATIVES COMPARISON MATRICES

The following tables provide a summary of the Evaluation of Compost program alternatives:

TABLE 5.3.4-A

Composting Evaluation

MATRIX #1

EVALUATION OF COMPOSTING ALTERNATIVES

Evaluative Criteria						Evaluative Discussions				
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability	
Processing Alternatives										
Yard Waste Composting	Effective means of diverting yard and some wood wastes. Can divert between 5 and 15%.	Can produce air and water hazards. Worker safety hazards are present.	Operational changes will accomodate changes in wastestream volumes or composition.	Will reduce quantities of yard and wood waste.	May be implemented in short or medium term planning period.	Will need facility that may be devel-oped with a mixed waste facility.	Not inconsistent with local policies but would need a CEQA determination.	State and local permits, franchise agreements and siting constraints.	Capital costs range from \$10 - 20,000 per ton capacity. O & M costs \$8 - 15 per ton per day.	Potential end use markets with home, agriculture and public use.
Mixed Organics Composting	Effective at diverting entire organic fraction. Can divert between 10 and 25%.	Similar to yard waste composting, with greater potential for contaminants.	May be less adaptable due to significant capital investment. However, typically more flexible in original design.	Will reduce quantities of yard, wood, food, paper and other organic wastes.	May be implemented in short or medium term planning period.	Will need facility that may be devel-oped with a yard waste facility.	Not inconsistent with local policies but would need a CEQA determination.	State and local permits, franchise agreements and siting constraints.	Capital costs range from \$30 - 60,000 per ton capacity. O & M costs \$20 - 30 per ton per day.	Market avail-ability may be affected by quality concerns Use may include agr., & landscape.
Co-Composting with Sewage Sludge	Effective means of diverting yard and some wood wastes and sewage sludge. Can divert between 5 and 15%.	Similar to yard waste composting, with potential heavy metal contaminants.	If co-composting only, then similar to yard waste comp. If facility has broad capabilities it will be similar to MSW comp.	Will reduce quantities of yard and wood waste, and sewage sludge.	May be implemented in short or medium term planning period.	Will need facility that may be devel-oped with a yard waste facility.	Not inconsistent with local policies but would need a CEQA determination.	State and local permits, franchise agreements and siting constraints.	Capital costs range from \$10 - 50,000 per ton capacity. O & M costs \$8 - 30 per ton per day.	Potential end use markets with home, agriculture and public use.

TABLE 5.3.4-B
Composting Evaluation
MATRIX #2

EVALUATION OF COMPOSTING ALTERNATIVES

Evaluative Criteria

Evaluative Discussions

Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability
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Collection Alternatives

Curbside Collection of Yard Waste	Can be very effective at diverting residential yard waste. Achieves 50 - 90% participation.	Will cause increased traffic impacts.	Can be altered to accomodate changes in waste volumes and characteristics.	Will decrease quantities of yard wastes disposed of.	May be implemented in short or medium term planning period. Schedule dependent on development of processing capabilities.	Will require collection vehicles.	Not inconsistent with existing plans and policies.	May require modifications in existing franchise agreements.	Costs are typically between \$60 - 80 per ton, or \$2 - 5 per household serviced per month.	Not applicable.
Drop-Off Sites for Yard Waste	Drop-offs typically achieve lower rates of participation than curbside programs. May attract high commercial participation.	May increase traffic at drop-off sites.	Can be altered to accomodate changes in waste volumes and characteristics.	Will decrease quantities of yard wastes disposed of.	May be implemented in short or medium term planning period. Schedule dependent on development of processing capabilities.	May require expansion of tipping areas at landfill.	Not inconsistent with local policies, but may require project review.	May require agreement of operator of private facilities.	Minimal additional expenditure.	Not applicable.
Sattelite Drop-Offs for Yard Waste	Effectiveness will depend on location.	May increase traffic at drop-off sites. Unsupervised sites may cause illegal dumping.	Can be altered to accomodate changes in waste volumes and characteristics.	Will decrease quantities of yard wastes disposed of.	May be implemented in short or medium term planning period. Schedule dependent on development of processing capabilities.	Will require collection containers at drop-off sites.	Not inconsistent with local policies, but may require project review.	May require local permits.	Minimal additional expenditure.	Not applicable.

TABLE 5.3.4-C
Composting Evaluation
MATRIX #3

EVALUATION OF COMPOSTING ALTERNATIVES

Evaluative Criteria						Evaluative Discussions				
Reduction Effectiveness	Potential Hazards	Adaptability	Consequenses on Wastestream	Time Frame For Implementation	Facility Need	Consistency With Local Policy	Institutional Barriers	Implementation Costs	Market Availability	
Policy Alternatives										
Fee Incentives	Can be very effective means of encouraging yard waste separation.	No hazards have been identified.	Can easily accomodate change.	Will decrease quantities of yard wastes from commercial and residential generators that self-haul.	May be implemented in short or medium term planning period.	Assumes that drop-off and processing facilities exist.	Not inconsistent with existing plans and policies.	Lack of existing processing infrastructure.	Staff and administration time and potential loss of landfill fee.	Not applicable.
Mandatory Separation of Yard Wastes	Can significantly increase capture rates of residential programs.	May be difficult to enforce.	Can easily accomodate change.	Will decrease quantities of yard wastes from commercial generators.	May be implemented in short or medium term planning period.	Not applicable.	Is inconsistent with local policies and would require implementing ordinances.	Lack of existing processing infrastructure.	Staff and administration time and potential loss of landfill fee.	Not applicable.
Yard Waste Landfill Disposal Ban	Can significantly increase capture rates of all yard waste programs.	May be difficult to enforce.	Can easily accomodate change.	Will decrease quantities of yard wastes from all generators.	May be implemented in short or medium term planning period.	Not applicable.	Is inconsistent with local policies and would require implementing ordinances.	Lack of existing processing and collection infrastructure.	Staff and administration time and potential loss of landfill fee.	Not applicable.

5.4 SELECTION OF COMPOSTING ALTERNATIVES

Based upon Solid Waste Generation Study, existing conditions and the evaluation of alternatives in the previous section, the following yard waste processing, collection and policy alternatives have been selected for implementation.

Short-Term Planning Period (1991-1995)

- Participate with other jurisdictions in the region in planning a **composting facility** to be completed in the medium-term, serving the City of Santa Maria, the City of Guadalupe, the City of Solvang and the surrounding County Unincorporated area in conjunction with the mixed waste processing facility to be developed in the short-term. This facility could be developed as a future phase of the mixed waste processing facility selected in the Recycling Component for the short-term.
- Participate with other jurisdictions in the region in the establishment of a **drop-off site at the Santa Maria Landfill** for yard waste, and wood waste serving the City of Santa Maria, the City of Guadalupe, the City of Solvang and the surrounding County Unincorporated area. This will be used for mulch and fuel production in the short-term and composting in the medium-term.
- Adopt **fee incentives** to encourage commercial, agricultural, and residential generators from participating jurisdictions to bring clean loads of yard, agricultural, and wood waste segregated from other wastes to the Santa Maria Landfill drop-off site.
- Conduct a local compost (and mulch) product **market development** program emphasizing landscape and agricultural uses of the municipally produced compost and mulch products.

Medium-Term Planning Period (1996-2000)

- Establish a **curbside yard waste collection** program for single-family households in the City of Santa Maria.
- **Composting facility becomes operational.** During the medium-term, City evaluates including other organic materials diverted through source separation techniques or through processing of mixed wastes in composting system.

5.4.1 PROGRAM DESCRIPTION AND RATIONALE FOR SELECTION

Yard Waste/Mixed Organics Composting

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, a composting facility serving the City of Santa Maria as well as the Cities of Guadalupe, Solvang and the surrounding unincorporated areas has been selected for implementation in the medium-term planning period (after 1995). Based on the evaluation of alternatives in the previous section, it has been determined that a significant amount of diversion can be achieved through composting. In addition to the large amount of yard waste in the City's wastestream, there is also a significant quantity of agricultural waste materials which are amenable to composting in Santa Maria's commercial wastestream. This high level of diversion through

composting will be necessary for the City to meet the aggressive diversion mandates set by AB 939. During the short-term planning period, the City should determine the feasibility of including organic materials found in the mixed wastestream such as food wastes, mixed paper and other miscellaneous organic materials. Based on the analysis in this plan, mixed organics diversion will be necessary to meet the 50 percent diversion mandate.

Composting has been selected for the medium-term due to the potential economies of scale the participating jurisdictions may realize if they develop the necessary composting capabilities as a later phase of the mixed waste processing facility (for the recovery of recyclables) selected in the Recycling Component. These economies of scale are a result of siting and permitting, as well as shared building, equipment and operating costs. This approach will also provide adequate time for compost products market research and development that should occur prior to development of municipal scale composting capabilities. During the short-term, it is recommended that any source separated yard and wood waste collected from residential or commercial generators be processed to produce mulch and fuel products. However, if the City wanted to proceed with yard waste composting (i.e., not mixed organics composting) in the short-term, the City could choose to forego these advantages, and develop composting capabilities at a facility separate from the mixed waste processing facility.

Although sewage sludge, and materials co-composted with sewage sludge, do not currently count towards AB 939 diversion goals, it can be processed with yard waste and other organic materials to increase the cost effectiveness of the composting facility and improve the quality of the final compost product. The addition of sewage sludge to a composting system has numerous benefits including: production of a high quality finished compost product, improved processing effectiveness for high carbon materials (brush, wood waster, yard waste), elimination or significant reduction of supplemental water needs, and a reduction of disposal problems associated with wastewater sludge. The current regulatory interpretation states that co-composted sludge and yard waste would not be creditable towards the AB 939 diversion mandates. However, the California Integrated Waste Management Board (CIWMB) is expected to consider allowing these materials to count in the near future.

The Santa Maria Landfill vicinity is a good potential site for composting activities (and other solid waste processing needs as well) due to the cost savings and environmental benefits associated with short transportation distances for compost feedstocks and residuals to be disposed. In addition, the Santa Maria Landfill area has adequate space for composting activities and land use buffer needs.

Drop-Off Site at the Santa Maria Landfill

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, a landfill drop-off for yard and wood wastes has been selected for implementation in the short-term planning period. A drop-off site is a relatively inexpensive, effective means of collecting clean (uncontaminated) loads of compostable materials. In addition, this alternative enables the City to build upon existing infrastructure. A special drop-off area (tipping area) should be established at the Santa Maria Landfill for yard wastes, wood wastes, and agricultural wastes. In the short-term planning period, materials brought to this site will be processed into mulch and fuel products (see Recycling Component section 4.5.3).

Curbside Collection of Yard Waste in Santa Maria

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local

conditions, curbside yard waste collection has been selected for implementation in the medium-term planning period. The evaluation of alternatives indicates that curbside yard waste collection is a relatively expensive alternative for yard waste recovery--but also one of the most effective. Other alternatives, such as mobile collection, are less expensive but not as convenient and thus, less effective, and may result in contaminated loads of yard waste. Recovering other compostable materials, such as food waste, may be achieved through source separated collection or through processing at the mixed waste processing facility selected for implementation in the Recycling Component of this plan. Source separated curbside collection of yard waste from residential generators in the City of Santa Maria provides a reliable, high quality source of compostable yard waste materials. Compost feedstocks collected in this manner help to maximize the quality of the final compost product; this will be of critical importance when marketing the compost.

Fee Incentive at the Santa Maria Landfill

Based on the Solid Waste Generation Study, the evaluation of alternatives and existing local conditions, fee incentives for clean loads of yard and wood waste has been selected for implementation in the short-term planning period. The evaluation of alternatives indicates that fee incentives for clean loads of yard waste, mandatory segregation of yard waste by commercial generators and yard waste disposal bans, are all effective ways to increase diversion of these materials. However, other factors, such as enforceability and public opposition, need to be taken into consideration. Mandatory separation requirements and yard waste disposal bans may be too difficult to implement and enforce relative to the marginal diversion benefit they provide. Thus, in the short-term planning period, it is recommended that the City adopt a fee incentive system which will encourage commercial and self-haul residential generators to segregate their compostable materials (yard waste, wood waste, and agricultural waste), and take them to the designated drop-off site at the Santa Maria Landfill. In the medium-term planning period, the City should reevaluate the more stringent policy alternatives to determine if they are necessary to achieve the AB 939 diversion mandates.

5.4.2 ANTICIPATED DIVERSION FROM SELECTED ALTERNATIVES

The tables on the following pages summarize the estimated diversion for the City of Santa Maria from participation in the Composting facility serving Guadalupe, Santa Maria, Solvang and the surrounding unincorporated area. The estimate is based on data from the Waste Generation Study.

Table 5.4.2-A

City of Santa Maria Composting Component Program Diversion Summary			
Composting Component Programs	Estimated Diversion Percent 1990	Estimated Diversion Percent 1995	Estimated Diversion Percent 2000
Yard Waste Drop-Off	0%	0%	5%
Curbside Yard Waste Collection	0%	0%	6%
Mixed Organics Composting*	0%	0%	12%
Total Composting Diversion	0%	0%	23%

* The feasibility of mixed organics composting will be evaluated further during facility scoping..

Table 5.4.2-B

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

COMPONENT: Santa Marla Composting Component
 PROGRAM: Yard Waste Drop-Off at SM Landfill
 GENERATOR TYPE: Commercial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Commercial Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Yard Waste	10.5%	50%	75%	3.9%
Wood Waste	1.3%	50%	75%	0.5%
Agri. Crop Residue	15.0%	50%	75%	5.6%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Commercial Disposal:	79,690	81,160	82,657	84,181	85,734	87,316	88,926	90,566	92,237	93,938	95,671
Material Type											
Yard Waste	0	0	0	0	0	0	3,501	3,566	3,632	3,699	3,767
Wood Waste	0	0	0	0	0	0	417	425	432	440	448
Agri. Crop Residue	0	0	0	0	0	0	5,002	5,094	5,188	5,284	5,381
Total Quantity Diverted (tpy)	0	0	0	0	0	0	8,920	9,085	9,253	9,423	9,597
Total Diversion (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	5%	5%

NOTES:

1. Estimated wastestream growth rate: 1.8% ; based on the Solid Waste Generation Study, page 5-3R.

Table 5.4.2-C

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

COMPONENT: Santa Marla Composting Component
 PROGRAM: Curbside Yard Waste Collection
 GENERATOR TYPE: Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Residential Waste Stream	Average Participation Rate	Estimated Capture Rate	Effective Recovery Rate
Yard Waste	35.2%	75%	90%	23.8%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Residential Disposal:	36,090	37,084	38,106	39,156	40,235	41,343	42,482	43,652	44,855	46,091	47,361
Material Type											
Yard Waste	0	0	0	0	0	0	10,094	10,372	10,658	10,951	11,253
Total Quantity Diverted (tpy)	0	0	0	0	0	0	10,094	10,372	10,658	10,951	11,253
Total Diversion (%)	0%	0%	0%	0%	0%	0%	5%	5%	5%	6%	6%

NOTES:

1. Estimated wastestream growth rate: 2.8% ; based on the Solid Waste Generation Study, page 5-3R.

Table 5.4.2-D

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

COMPONENT: Santa Maria Composting Component
 PROGRAM: Mixed Organics Composting
 GENERATOR TYPE: Commercial

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Commercial Waste Stream	Uncommitted Commercial Stream	Estimated Capture Rate	Effective Recovery Rate
Yard Waste	10.5%	25%	75%	2.0%
Food waste	9.1%	50%	75%	3.4%
Other Paper	13.4%	50%	75%	5.0%
Mixed Paper	4.6%	45%	75%	1.6%
Wood Waste	1.3%	25%	75%	0.2%
Agricultural Wastes	15.0%	50%	75%	5.6%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	162,060	165,500	169,350	173,300	177,330	181,470	185,710	190,040	194,490	199,040	203,700
Total Commercial Disposal:	79,690	81,160	82,657	84,181	85,734	87,316	88,926	90,566	92,237	93,938	95,671
Material Type											
Yard Waste	0	0	0	0	0	0	1,731	1,763	1,816	1,849	1,884
Food waste	0	0	0	0	0	0	3,035	3,091	3,148	3,206	3,265
Other Paper	0	0	0	0	0	0	4,469	4,551	4,635	4,720	4,807
Mixed Paper	0	0	0	0	0	0	1,381	1,406	1,432	1,458	1,485
Wood Waste	0	0	0	0	0	0	198	202	216	220	224
Agricultural Wastes	0	0	0	0	0	0	4,952	5,044	5,188	5,284	5,381
Total Quantity Diverted (tpy)	0	0	0	0	0	0	15,765	16,057	16,435	16,738	17,047
Total Diversion (%)	0%	0%	0%	0%	0%	0%	8%	8%	8%	8%	8%

NOTES:

1. Estimated wastestream growth rate: 1.8% ; based on the Solid Waste Generation Study, page 5-3R.

Table 5.4.2-D-1

PROGRAM DIVERSION ESTIMATE FOR THE SHORT AND MEDIUM-TERM PLANNING PERIODS

COMPONENT: Santa Maria Composting
 PROGRAM: Mixed Organics Composting
 GENERATOR TYPE: Residential

COMPOSITION DATA AND ESTIMATES OF PARTICIPATION AND CAPTURE

Material Type	Percent of Residential Waste Stream	Uncommitted Residential Stream	Estimated Capture Rate	Effective Recovery Rate
Yard Waste	35.2%	25%	75%	6.6%
Food waste	8.2%	50%	75%	3.1%
Other Paper	11.9%	50%	75%	4.5%
Mixed Paper	7.9%	25%	75%	1.5%
Wood Waste	1.2%	50%	75%	0.5%

DIVERSION QUANTITIES BY MATERIAL TYPE AND PERCENT OF TOTAL WASTE STREAM DIVERTED

System Data	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Generation:	148,750	150,320	151,740	153,160	154,600	156,050	157,520	159,010	160,520	162,020	163,550
Total Residential Disposal:	36,090	37,101	37,101	37,101	37,101	37,101	37,101	37,101	37,101	37,101	37,101
Material Type											
Yard Waste	0	0	0	0	0	0	2,429	2,429	2,449	2,449	2,449
Food waste	0	0	0	0	0	0	1,141	1,141	1,141	1,141	1,141
Other Paper	0	0	0	0	0	0	1,656	1,656	1,656	1,656	1,656
Mixed Paper	0	0	0	0	0	0	550	550	550	550	550
Wood Waste	0	0	0	0	0	0	157	157	167	167	167
Total Quantity Diverted (tpy)	0	0	0	0	0	0	5,932	5,932	5,962	5,962	5,962
Total Diversion (%)	0%	0%	0%	0%	0%	0%	4%	4%	4%	4%	4%

NOTES:

1. Estimated wastestream growth rate: 2.8% ; based on the Solid Waste Generation Study, page 5-3R.

5.4.3 METHODS OF HANDLING AND DISPOSAL

Yard Waste/Mixed Organics Composting

Source separated yard wastes, wood waste and agricultural waste recovered through drop-off sites and curbside collection will be transported to the yard waste composting facility for processing. Additional materials may be recovered at the mixed waste processing facility. The materials will be temporarily stored until they can be ground and screened to prepare them for curing. The materials will either be cured in windrows or inside specially designed vessels. The finished compost product will be screened again and tested for physical and chemical characteristics. The resulting compost product will be marketed to local and regional end-users such as farmers and landscapers as well as local and state government agencies. Any non-compostable residuals will be transported to the Santa Maria Landfill for disposal.

Drop-Off Site at the Santa Maria Landfill

Clean, uncontaminated loads of yard waste, wood waste, and agricultural waste from both commercial and residential generators will be collected at the Santa Maria Landfill. The materials brought to this facility will be deposited at a separate tipping area for temporary storage. The materials will then be transported to the Santa Maria composting facility for processing.

Curbside Collection of Yard Waste

Curbside yard waste collection can be accomplished in a number of ways. Some communities have used a combination of a packer truck and a front-end loader with a modified bucket known as a “claw.” Other communities have used bags and special containers. Typically, communities select the yard waste collection system which is compatible and consistent with their existing solid waste collection system; this enables a City to build on existing equipment and technical capabilities. This approach also avoids the problems associated with using a new system which has not been locally tested and proven.

The City of Santa Maria currently has automated collection for solid wastes; thus, an automated system for yard waste collection may be the most practical means to collect source separated yard waste from single-family households. One example of this approach is the County of Sacramento, which is planning to supply all eligible households with automated collection containers for yard waste over a phased three year period. In this type of system, residents are asked to place all of their yard waste into a (90 gallon) automated yard waste collection container. The containers are specially marked to avoid contamination of the yard waste by other refuse. These special containers are then placed on the curb by residents on a weekly basis for collection. Packer trucks with automated lifts collect the yard waste and transport them directly to the composting facility for processing.

The City of Santa Maria will have to determine the institutional arrangements (public vs. private ownership and operation) for the provision of these collection services. Although the City may wish to allow the private sector to provide the services related to yard waste collection due to capital investment needs and staffing requirements, it is important that the City consider the effects of private control of some or all of the wastestream. If the City gives up control of the wastestream, there may be a negative impact on locally owned facilities and authority over diversion or disposal services. Contractual arrangements can be made which enable the City to contract services out while still maintaining authority over the collection and final disposition of the materials collected.

5.4.4 FACILITIES TO BE UTILIZED IN IMPLEMENTATION

Yard Waste/Mixed Organics Composting

A composting facility will be necessary for processing source separated yard waste collected at the drop-off sites and through curbside yard waste collection. This facility could be an independent facility or it could be developed in conjunction with the mixed waste processing facility selected in the Recycling Component of this plan. The composting facility, or composting portion of a more general facility, will require an area for collecting and storing incoming compostable materials (yard wastes, wood wastes, agricultural wastes), an area for pre-processing materials (sorting, grinding, screening), an area for active composting (either windrows or vessels), an area for screening and storing the final product prior to marketing, and a buffer area around the facility to reduce visual, noise and odor impacts.

Drop-Off Site at the Santa Maria Landfill

A designated tipping area or drop-off site will be established at the Santa Maria Landfill for clean, source separated compostable materials such as yard wastes, wood wastes, and agricultural wastes. This could be in containers (debris boxes) or simply be an open pile on asphalt or concrete pad. A similar yard waste collection drop-off site will be established at the Foxen Canyon Landfill serving Solvang.

5.4.5 IDENTIFICATION OF END-USERS

Potential end-use markets for compost products include commercial landscaping, home and garden use, agriculture, public facilities (i.e., parks and recreation facilities) and landfill cover. Recent legislation (SB 1322) creates new markets for compost by requiring virtually all state agencies to develop plans for the utilization of compost and mulch produced from yard waste and other materials diverted from the wastestream. State procurement requirements for compost should be expected to begin to take effect in 2 to 3 years, particularly from agencies such as Caltrans.

5.4.6 ALTERNATIVE MARKET STRATEGY

In the event local marketing efforts for compost prove inadequate, the City will do one or more of the following:

1. Develop policies requiring the use of municipally produced compost by all City landscaping operations.
2. Explore the feasibility of requiring that developers of planned communities and major shopping centers utilize compost for landscaping.
3. Seek new markets outside of Santa Barbara County.
4. Work with local farmers and the regional agricultural extension to find ways to use municipally produced compost to meet local agricultural needs.

5.5 COMPOSTING COMPONENT IMPLEMENTATION

5.5.1 RESPONSIBLE AGENCIES

The responsibility for implementation of the activities selected in this component will be shared by the City of Santa Maria, the City of Guadalupe, the City of Solvang, Santa Barbara County and the private sector. Santa Maria will lead the development of the composting facility which could be part of other facilities recommended in the Recycling Component of this plan. The other jurisdictions involved will participate in close cooperation with the City of Santa Maria in the scoping, design, funding and operation of the composting facility. Operation of the curbside yard waste collection and the yard waste drop-off site at the Santa Maria Landfill will be the responsibility of the City of Santa Maria.

5.5.2 IMPLEMENTATION TASKS AND SCHEDULES

Yard Waste/Mixed Organics Composting

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	6/94	City begins scoping the configuration and capacity of the composting facility. (This schedule may be for the expansion of the mixed waste processing facility to include composting).
Task 2	9/94	In cooperation with the other participating jurisdictions, the City prepares a detailed description of proposed facility and institutional arrangements.
Task 3	1/95	Cities prepare and adopt an agreement for development of the composting facility.
Task 4	1/95	Release Requests for Proposals (RFPs), conduct Architecture and Engineering (A&E), or other facility procurement process.
Task 5	1/95	Conduct CEQA determinations and begin facility permitting process.
Task 6	1/96	Siting, permitting and CEQA related documentation completed.
Task 7	1/96	Facility construction begins.
Task 8	9/96	Facility performance testing.
Task 9	1/97	Full scale facility operations.
Task 10	Ongoing	Conduct annual monitoring and evaluation.

Drop-Off Site at the Santa Maria Landfill

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	1/97	Begin transporting yard waste and wood waste materials collected at the drop-off established for yard and wood waste mulching (see Recycling Component) to composting facility area.
Task 2	Ongoing	Conduct annual monitoring and evaluation.

Curbside Yard Waste Collection

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	1/95	City evaluates institutional arrangements (public vs. private) and curbside yard waste collection program design.
Task 2	1/96	City conducts initial yard waste collection pilot to help design full scale program.
Task 3	1/97	Full scale curbside yard waste collection becomes operational.
Task 4	Ongoing	Conduct annual monitoring and evaluation.

Fee Incentives at the Santa Maria Landfill

<u>Task</u>	<u>Date</u>	<u>Description</u>
Task 1	1/92	City evaluates the existing disposal system to determine type of fee incentive to encourage self-haul generators to segregate yard waste and other specified compostables (for mulching and fuel production in the short-term, and composting in the medium-term).
Task 2	9/92	City revises tipping fees to encourage use of the yard waste, wood waste and agricultural waste drop-off site at the landfill.
Task 3	Ongoing	Conduct annual monitoring and evaluation.

5.5.3 COMPOSTING PROGRAM IMPLEMENTATION COSTS

Yard Waste/Mixed Organics Composting

Composting can be carried out using a variety of available technologies. The different approaches are often referred to as low-tech, medium-tech and high-tech. These differences are typically based on the degree of automation used at the facility. For example, some composting operations turn windrows with front-end loaders borrowed from the landfill, while others buy highly specialized windrow turning machines. It is important to understand these costs are planning level estimates which are necessarily based on a number of broad assumptions. The actual costs will vary based on site selection, facility specifications and other specific conditions.

A yard waste composting facility serving the Santa Maria, Guadalupe, Solvang and County unincorporated area will need a design capacity of 80 to 100 tons/day (tpd) based on projected generation from 1995 to the year 2000. A windrow yard waste composting facility with a design capacity of approximately 100 tpd will require a site area of approximately 30 to 60 acres and will have capital costs in the range of \$10,000 to \$20,000/ton of daily capacity and annual operations and maintenance costs on the order of \$10 to \$20/ton of daily throughput. Thus, assuming the Santa Maria watershed yard waste composting facility will have a daily throughput of approximately 80 tpd in 1995 the estimated capital costs of \$800,000 to \$1,600,000 (not including land costs) and annual operations and maintenance costs of \$240,000 to \$480,000. If it is determined that it is necessary have sludge composting and mixed organics composting capability (to achieve 50 percent diversion and to maximize the quality of the compost product), the capital costs will be on the order of \$40,000 to \$60,000/ton of daily capacity, this capability could be developed as a later phase of the mixed waste processing facility selected for implementation in the Recycling Component of this plan (Section 4).

The City has selected mixed waste processing (serving the entire Santa Maria watershed) in the short-term planning period (before 1995). If the facility is developed as an Integrated Diversion Facility (IDF) with both mixed waste processing and composting capabilities, then the jurisdictions developing the facility could potentially realize significant economies of scale. As indicated in the implementation section of this plan, a detailed feasibility analysis and procurement process will be conducted for the IDF during the short-term planning period.

Based on the waste disposal projections in the Solid Waste Generation Study for the year 2000 for the City of Santa Maria, Guadalupe, Solvang and the County Unincorporated area, it is estimated that the design capacity of an integrated diversion facility with mixed waste processing and composting capabilities would need to be approximately 500 tons per shift (tpd) (i.e., capable of processing about 65 tons per hour). An IDF in this size range can be expected to have capital costs in the range of \$40,000 to \$60,000 per ton of daily capacity and annual operations and maintenance costs of \$20 to \$40 per ton of daily throughput. Thus, capital costs will range from \$20,000,000 to \$30,000,000 and annual operations and maintenance costs will range from approximately \$3,000,000 to \$6,000,000.¹ A mixed waste processing facility without composting capabilities can be expected to have capital costs in the range of \$15,000 to \$25,000 per ton of daily capacity and annual operations and maintenance in the range of \$20 to \$40 per ton of daily throughput. Thus, capital costs will range from \$7,500,000 to \$12,500,000 and annual operations and maintenance costs will range from approximately \$3,000,000 to \$4,500,000.

¹ These cost estimates are planning level estimates which are necessarily based on a number of broad assumptions. The actual costs will vary based on site selection, facility specifications, and other specific conditions.

Drop-Off at the Santa Maria Landfill

The costs of a yard waste drop-off facility at the landfill are also dependent on a number of factors. If the yard waste composting facility is adjacent to the landfill, then transportation costs are zero; if the composting facility is 10, 15 or 20 miles away from the landfill drop-off site, the transportation costs can become significant. Thus, if the composting facility was adjacent to the Santa Maria Landfill, the drop-off O&M costs would be significantly lower. Staffing requirements are also highly variable. Some landfill drop-offs are operated using existing staff resources while others require additional employees to monitor the yard waste drop-off. One example of a yard waste drop-off with a medium range cost is the City of Seattle yard waste drop-off sites at their transfer stations, which are estimated to cost \$10/ton.² If this value is used as an approximation for the Santa Maria Landfill yard waste drop-off sites, the costs will be as follows:

<u>Jurisdiction</u>	<u>Estimated 1995 Drop-Off Quantities (tpy)</u>
Santa Maria	8,800 tpy
Guadalupe	450 tpy
Santa Barbara County	2,000 tpy
TOTAL	11,250 tpy

$$\text{\$10/ton} \times 11,250 \text{ ton/year} = \text{\$112,500/year}$$

Curbside Yard Waste Collection

Curbside yard waste collection costs depend on the type of technology used, the frequency of collection, the availability of existing equipment, the amount of yard waste in the wastestream and a variety of other factors. Curbside collection of yard waste costs range from \$2 to \$5/household/month. In the City of Santa Maria, there are approximately 12,000 single family households; thus, curbside collection of yard waste can be expected to cost between \$288,000 and \$720,000/year (i.e. \$24/household/year to \$60/household/year). Yard waste collection costs can also be estimated on a per ton basis. Studies have shown that curbside yard waste collection costs range from **\$60 to \$80/ton** collected.³ If it is assumed that Santa Maria will collect approximately 9,800 tons of yard waste/year through a curbside collection program, the costs will range from approximately **\$588,000 to \$780,000 per year**. This narrower range provides a good cross check on the \$2 to \$5 estimate, and is probably more applicable to the City of Santa Maria's potential costs. These cost may change significantly by the scheduled implementation date in the medium-term planning period.

5.5.4 REVENUE SOURCE

Solid waste management in the City of Santa Maria has traditionally been financed through tipping fees charged at the Landfill. See the Funding Component of this Source Reduction and Recycling Element for a detailed description of revenue sources and program funding (Section 9).

² *Yard Waste Composting, A Study of Eight Programs*, U.S. EPA, April 1989, p. 37.

³ *Characteristics of Collection Methods, The Biocycle Guide to Yard Waste Composting*, Mark Selby, p. 32

5.6 COMPOSTING PROGRAM MONITORING AND EVALUATION

The AB 939 Regulations require the City to identify how each selected program will be monitored and evaluated during implementation. Monitoring includes quantifying diversion from selected alternatives and tracking progress on the objectives adopted in this component.

This section provides program monitoring and evaluation mechanisms for the recommended Compost Component programs. This section: (1) proposes methods for monitoring achievement of the Component Objectives; (2) identifies agencies responsible for monitoring and evaluation; (3) identifies criteria for evaluating program effectiveness, (4) discusses monitoring and evaluation funding, and; (5) identifies measures to be taken if monitoring shows a shortfall in the attainment of the component objectives. **Note:** Article 6.2, Section 18733.6 (b) (4) of the AB 939 Regulations requires the City to obtain prior written approval of this monitoring and evaluation methodology from the CIWMB.

5.6.1 MONITORING METHOD

Composting activities in the City of Santa Maria will be monitored using a detailed reporting system. All entities (public and private) providing solid waste diversion through composting will submit detailed diversion data to the City. An annual **Compost Program Monitoring and Evaluation Report** will be compiled which identifies the quantities and composition of materials diverted through composting by generator type and describes the various aspects of the composting system in accordance with the evaluative criteria listed in the next section. The Composting Program Monitoring and Evaluation Reports will contain the following:

1. a brief summary of the composting programs being implemented in the area affected by the report and the schedules for any programs in planning and/or development;
2. a brief discussion of progress towards the objectives established for the Composting Component;
3. a short evaluation of the Composting programs in terms of the evaluative criteria listed in this section (see below);
4. If a shortfall in the attainment of Composting Objectives is identified, a special section of the report will be compiled which summarizes the shortfall(s) in terms of the list contained at the end of this section.

The completed reports will be submitted to the Local Solid Waste Task Force, and the CIWMB.

5.6.2 CRITERIA FOR MEASURING EFFECTIVENESS

1. Quantity of materials diverted from landfill disposal, expressed in tons or cubic yards and as a percentage of the total waste stream.
2. Percent of residential and commercial participation in the composting program.
3. Quantity and quality of compost distributed to markets and market availability.
4. Program implementation costs (i.e. cost/ton diverted).

5.6.3 RESPONSIBLE AGENCIES

The City of Santa Maria, Public Works Department, Solid Waste Management Division will be responsible for compiling monitoring and evaluation data from the composting facility. This responsibility includes evaluating the program in terms of the monitoring and evaluation criteria listed in the previous section. The City will also monitor and evaluate the yard waste drop-off site at the Santa Maria Landfill and the curbside yard waste collection program.

5.6.4 MONITORING COST AND FUNDING REQUIREMENTS

Monitoring and evaluation costs include staff time for compiling the necessary data inputs (such as recording tons diverted, waste diversion composition, and program costs), and staff time for producing the annual Compost Program Monitoring and Evaluation Report. The costs of monitoring and evaluation will be funded primarily by tip fees and any revenues from sale of the final compost products. Revenue sources and funding are discussed in detail in the Funding Component of this Source Reduction and Recycling Element.

5.6.5 MEASURES TO BE IMPLEMENTED IN THE EVENT OF A SHORTFALL

In event of any significant shortfall in achieving the established goals and objectives, the City will produce a special section of the report which will include the following:

- Specific areas in the compost processing, collection and marketing system which are deficient;
- Potential measures to improve compost program participation, processing, collection and/or marketing activities. These measures may include, but are not limited to: increased promotion and public information, increased market development and revision of component objectives.

The special report will be submitted to the CIWMB, the participating jurisdictions and the Local Task Force, for evaluation and direction.

CHAPTER 6

SPECIAL WASTE COMPONENT

Definition of Special Waste

In general, special wastes are relatively large, identifiable wastestreams from the general municipal solid wastestream that have the potential to be segregated, reused, recycled, or disposed in a manner uniquely suited to that waste. These wastes are usually generated by an easily defined group of commercial, industrial, or institutional businesses and are frequently subject to regulation by multiple government agencies.

Prior to the implementation of AB 939, a "special waste" was a waste defined in the California hazardous waste regulations. AB 939 expands that original definition of "special waste" to include solid wastes as well as hazardous wastes. An AB 939 "special waste" is any solid waste, which, because of its source of generation, physical, chemical or biological characteristics or unique disposal practices, is specifically conditioned in the solid waste facilities permit for handling and/or disposal. Special wastes are also any hazardous wastes specifically listed, classified, or granted a variance under Sections 66740, 66744, and 66310 of Title 22 of the California Code of Regulations (CCR), respectively.

AB 939 requires discussion of the following special wastes: ash, non-hazardous sewage sludge, asbestos, automobile shredder waste, automobile bodies, as well as "other" special wastes.

While the component addresses these wastes as required, the discussion focuses on three special wastes which were either identified in the Waste Generation Study, have unique disposal requirements, or can be managed as a separate wastestream to reduce hazard to public health. The three wastes are: tires, sewage sludge and medical waste.

6.1 Special Waste Component Objectives

The following objectives have been established by the City of Santa Maria for the management of targeted special wastes during the short-term. In the case that the County of Santa Barbara is responsible for or coordinates management of a special waste, the stated objectives represent those of the County.

6.1.1 Special Waste Objectives

Tires

1. Continue current handling of tires through commercial businesses until such time that feasible technological alternatives are developed for recycling and/or reusing.

Sewage Sludge

1. Continue handling sewage sludge using current methods which comply with applicable regulations until feasible alternative methods for recycling, reuse, reduction and/or composting are developed.
2. Continue monitoring and evaluating technological developments for methods to recycle, reuse, and/or compost sewage sludge, and if possible, implement such methods.

Medical Waste

1. Continue landfill load check program to ensure that all medical waste loads, including small quantity amounts, have been properly treated to render the medical waste a solid waste.
2. Support the County of Santa Barbara implementation of the small quantity generator program.

6.1.2 Targeted Materials

Tires, sewage sludge and medical waste have been targeted by the City of Santa Maria for diversion programs due to their identification in the wastestream, special handling required or hazard potential compared to other AB 939 special wastes.

6.2 Existing Conditions

Each of the three special wastes addressed in this section will be discussed in terms of the existing programs, the quantity of waste generated and of waste diverted presently, and the future status of the existing programs.

Tires

In Santa Maria, tires are generated by residents, businesses operating vehicle fleets, and auto repair and wrecking facilities. According to the Waste Generation Study (reported under Other Organics), approximately 3,201 tons (2% of aggregate wastestream) of tires were generated in the baseline year 1990, of which 704 tons were diverted. However, the City of Santa Maria reports that landfill records indicate 81 loads of tires only were received in 1990, accounting for 178 tons of tires disposed. Other loads of mixed wastes disposed were likely to have included some tires, but the landfill manager maintains that the quantity of tires disposed as determined by the Waste Generation Study is not accurate. The City is continuing to check into this discrepancy. The City contends that diversion of tires is much higher than identified in the Study, but the diversion cannot be attributed at this time.

Disposal of tires at the landfill is discouraged by the high disposal fee of \$2.35 per tire or \$191.20 per ton. As mentioned, the landfill does not experience significant disposal of tires, primarily due to the cost. When they are received at a facility, they are spread throughout the landfill and buried separately since tires tend to resurface after burial at the landfill.

The City has no waste tire facilities currently registered with the California Integrated Waste Management Board (CIWMB). Until recently, automobile tires were collected from local businesses throughout the county by Bud's Tires of Nipomo, California (San Luis Obispo County). After collection, a percentage of the tires are cut in half, shredded, and transported to a waste-to-energy plant. The remainder are being stockpiled pending the technological development of a dependable recycling alternative. Bud's Tires has discontinued operations.

Two other commercial operations, Lakin Tires, of Los Angeles, and Oxnard Tire Recycling, of Union City, California, have recently begun doing business in the County. Lakin Tires retreads, recycles into construction materials, and landfills collected tires. Oxnard Tire Recycling transports collected tires to their tire-fueled power plant located in Westley, California. No quantities of diverted tires are available yet. The City anticipates that the introduction of these businesses will increase the quantity of tires being diverted.

Sewage Sludge

The disposal of solid waste at landfills is governed by the California State Water Resources Control Board (CSWRCB) through the Regional Water Quality Control Board (RWQCB). These regional boards are responsible for implementing sewage sludge regulations within their jurisdiction and have the authority to adopt equal or higher standards for disposal of waste material to land.

The California Regional Water Quality Control Board, Central Coast Region, has adopted standards modeled after the CSWRCB regulations. The regulations suggest that liquids or high moisture content waters, such as sewage sludge, should not be disposed of in Class III landfill sites without either natural or artificial leachate control capabilities.

In facilities permitted to accept sewage sludge, the material must be screened by the discharger to verify that it is non-hazardous and contains less than 50% moisture by volume. The material is cleared through the County of Santa Barbara Health Department and the Central Coast office of the CRWQCB. Once received, the material is handled as general refuse. On January 1, 1992, the U.S. Environmental Protection Agency is scheduled to publish new regulations regarding a pathogen reduction requirement which could affect sewage sludge practices in the County of Santa Barbara.

The City of Santa Maria operates the Santa Maria wastewater treatment plant located at 601 Black Road, Santa Maria, California. Approximately 2,400 to 4,000 cubic yards (2009 tons) of water treatment sludge and 550 cubic yards (55 tons) of grit are generated per year by the facility. Approximately 90 percent comes from residential generators and 10 percent is from industrial generators. All generators are located in the incorporated City.

Water treatment sludge is dried at the facility in 12 drying beds. The drying beds are capable of handling a maximum of 4,000 cubic yards of material. After drying, the material is stockpiled on site. At this time, no material is landfilled or land applied. Alternative methods of disposal are currently under investigation.

Medical Waste

Medical waste in Santa Maria is regulated by the City and County. Regulation of medical waste generators occurs through inspections, incident investigations, enforcement, public education, and assistance to industry. In order for medical wastes to be disposed of at Santa Maria Landfill, they must be treated prior to disposal.

Treatment includes autoclaving and incineration of flammable materials. All sharps must be disposed of in a hard, rigid container which is properly labeled and sealed. The sharps container and its contents must be properly treated (ie. autoclaved) before being rendered a solid waste. Neither the City nor County operate treatment facilities. Most onsite treatment facilities dispose of treated waste legally in their solid waste dumpsters. Once medical wastes have been treated, they are considered general refuse, and as such, require no further special handling. Untreated medical wastes are not accepted at the landfill.

The Waste Generation Study did not identify any quantity of medical waste generated annually in the City of Santa Maria. Consequently, the City is unable at this time to describe existing conditions in its jurisdiction. Because the City is aware that there are medical waste generators in the community, even though no quantities are available at this time, medical waste programs are being addressed in the Special Waste Component due to the potential hazard and unique handling required by these wastes.

As the process involved in identifying medical waste in the wastestream is quite involved and time-consuming, in particular identifying the quantity generated by small generators (those that generate less than 200 pounds per month), the City will work with the County to incorporate identification of medical waste generated into a subsequent Waste Generation Study.

Discussion of Other Special Wastes

Asbestos

While asbestos was not found in Santa Maria's wastestream by the Waste Generation Study, Public Resources Code Section 41250 requires a discussion of this waste type in the component.

Non-friable asbestos is accepted only at the Tajiguas Landfill, owned and operated by the County of Santa Barbara, from licensed asbestos contractors located on the South Coast. A contractor provides information on where the asbestos came from and the expected date of disposal. Small quantities of non-friable asbestos must be double bagged. When received at the site, the material is placed in a previously excavated hole and covered with soil. Large loads are transported to the site in covered containers. The material is deposited at the toe of the working face, covered with several feet of general refuse and compacted.

Ash

While ash was not found in the City's wastestream, AB 939 regulations require discussion of this waste type. There are currently no incinerators operating within the County of Santa Barbara; consequently, no incinerator ash is disposed of in County or City facilities.

Automobile Bodies and Automobile Shredder Wastes

There are no automobile shredders located within the County of Santa Barbara or City of Santa Maria. Santa Barbara County Code (Chapter 17, Sec. 46) prohibits the importation of wastes from outside the County; consequently automobile shredder wastes are not handled by any County facility.

Currently, none of the County facilities accept auto bodies for disposal. There is a significant number of vehicles abandoned each year within the County due to either the lack of knowledge of methods of disposal or the unwillingness to incur the costs of disposal. The County operates an abandoned vehicle abatement program which provides approximately 460 vehicles annually to local auto dismantlers. Most obsolete auto bodies are disposed of by auto dismantlers as scrap metal. Currently, this program is funded by the County of Santa Barbara Solid Waste Enterprise Fund, however, a cost recovery procedure is being established to cover future vehicle abatement activities.

According to the Solid Waste Generation Study, Santa Maria diverted 682 tons of auto bodies generated by the residential sector. The Study indicates that diversion of the auto bodies occurred through "Private Buyback and Dropoff" - private sector owned and operated recycling programs.

6.3 Alternative Special Waste Programs

This section identifies and evaluates alternative programs for special waste management.

6.3.1 Identification of Program Alternatives

The following section identifies and provides a brief description of alternatives for special waste management.

Tires

In addition to the method currently used in the City of Santa Maria, and throughout the County of Santa Barbara, four tire management alternatives can divert tires from landfilling or reduce tire disposal hazards. These alternatives are listed below with a brief description:

- Transformation technologies such as pyrolysis, incineration, and processing into refuse-derived fuel (RDF)
- Shredding and recycling
- Reuse as a retread tire or another use as a whole tire
- Shredding and landfilling

Pyrolysis is a waste-to-energy alternative that applies to the controlled oxygen-free or starved oxygen heating of scrap tires to produce various gaseous, liquid, and solid charcoal-like fuel products. Shredded tires are the most suitable for this alternative; however, whole tires have been tried in some pyrolysis experiments.

Incineration is a waste-to-energy alternative that applies to the controlled combustion of tires. The heat generated from combustion may be used to produce steam for steam heating or for the production of electricity. Shredded tires are most suitable for this process; however, there are examples of incinerators that burn whole tires.

Refuse-derived fuel (RDF), or tire-derived fuel (TDF), is a waste to energy alternative that provides a more refined tire fuel than that used in pyrolysis or the incineration alternative described above. TDF typically consists of tires shredded to one- to two-inch squares. The metal and textile layers of the tire are removed by mechanical means and the remaining rubber square with a high heating value is easily transportable to an incinerator, cement kiln, or boiler combustion application adapted to accept TDF.

Tire shredding for the purpose of recycling in manufacturing and agricultural uses is another alternative that diverts the tire from landfilling. Experiments have shown that tires shredded to very small pieces have been used successfully as soil amendment for growing crops because the tire pieces improve soil aeration properties.

Tire retreading is another tire reuse alternative. Passenger tires are not typically retreaded in Santa Barbara County; however, truck tires are. The California Highway Patrol prohibits use of recap tires on the front of some vehicles.

Direct reuse of whole tires has been practiced for various applications. Whole tires can be used for:

- Playground equipment for children in schools or parks
- Dock bumpers, agricultural equipment bumpers
- Offshore artificial reefs
- Nonobstructive low-cost fencing
- Highway retaining walls

Tire shredding and landfilling reduces the problem of whole tires "floating" to the surface of the landfill and reduces the volume of material landfilled. Tire shredding and landfilling is preferable to tire stockpiling because it does not have the hazards associated with fires and vectors.

Sewage Sludge

Alternatives for reducing the amount of sewage sludge landfilled are still being developed throughout the state and the nation. Currently, landspreading of properly treated sludge and co-composting are the two most acceptable alternatives. The Santa Maria wastewater treatment plant does not landfill any sewage sludge, and is exploring alternative methods of handling, as discussed under Existing Conditions. Co-composting is discussed and evaluated in the Composting Component.

Medical Waste

Alternatives for reducing the tonnage of medical waste disposed to landfills include increased use of incineration as a medical waste treatment method. Incineration can reduce waste quantity by up to 95 weight percent. However, the new air pollution control requirements for incinerators may be a disincentive for incinerators to expand or develop new facilities. Currently practiced methods of reducing the hazard of medical waste include incineration and autoclaving.

To further reduce the hazard of medical waste disposed in Santa Barbara County landfills, the County is planning to implement the newly required Small Quantity Generator (SQG) program and enforce the DHS requirements of recordkeeping of quantities generated and quantity and method of material treated and disposed.

Source reduction of medical waste, another alternative, would involve a better segregation of medical waste from solid waste at the source, and the use of reusable (e.g., launderable) materials.

6.3.2 Evaluation of Alternatives

AB 939 regulations require that six criteria be used to evaluate special waste program alternatives, as follows:

- reduction effectiveness
- potential hazards
- ability to accommodate changing conditions
- consequences on wastestream
- ease of implementation
- facility needs

In addition, a discussion on the following four issues is required:

- consistency with local policies, plans and ordinances
- institutional barriers to implementation
- costs in short- and medium-term
- end-uses/market availability

Tires

The waste diversion potential of tire shredding and recycling is high and the costs moderate. Local jurisdictions do not favor contracting for the operation when existing activities meet the needs for managing the present quantity of tires, so there may be resistance in the community. The system is somewhat flexible and could be implemented in the short- and medium-terms. There are no ordinances or policies prohibiting this practice. Potential hazards are minor, while the limited availability of markets is of major concern.

Tire shredding and landfilling reduces the volume of waste disposed but diverts no waste, and consequently, has no impact on waste generated. Costs are low and the program can be implemented at any time. There are no potential hazards and facility needs are moderate. Market availability is not applicable.

While tire reuse offers no potential hazards or institutional barriers, and is not inconsistent with local policies and ordinances, anticipated waste reduction is low and the impact on the wastestream is minimal because so many passenger vehicle tires cannot be retreaded. Other evaluation criteria do not impede the implementation of this alternative.

Transformation technologies generally require shredding prior to processing and costs are very high, whereas waste diversion potential is very low. Potential hazards and institutional barriers exist, and these activities usually face public resistance. Extensive facilities are required and the programs are difficult and time-intensive to implement. There is no flexibility in these systems.

Sewage Sludge

As discussed above, diversion alternatives for sewage sludge are still be evaluated at the state and national levels. The alternatives being considered by Santa Maria are land spreading and examination of the potential and feasibility of a co-composting programs. When other safe and effective means of diverting sewage sludge are developed, they will be evaluated by the City according to the criteria above.

Medical Waste

The costs of implementing improved segregation and source reduction activities would be low; however, the quantities of waste diverted through these programs also would be low. With respect to the implementability of segregation and source reduction methods, there would be virtually no institutional barriers expected and they would be consistent with local policies and ordinances. End-uses and availability of markets are not applicable considerations because medical waste is not generally not recycled or reused. No additional facility needs are required and these practices can be implemented in the short- and medium-terms.

In general, this is the only alternative that actually diverts medical waste from the landfill, but the amount is quite small, and autoclaving and incineration, currently practiced, must still be used to handle the remaining waste.

Incineration and autoclaving of medical waste serve as an effective method of handling medical waste with respect to rendering this waste nonhazard at very low cost. These activities are totally consistent with local plans, policies and ordinances, and face no institutional barriers, although air pollution control requirements for incinerators may be a disincentive to the expansion or development of new facilities. Both methods of treating medical waste can be implemented easily in the short-term. No potential hazards exist and the systems are flexible. End-uses and markets are not applicable.

6.4 Selection of Special Waste Programs

The selection of programs for each special waste is discussed below. Current management practices for special wastes will be continued and no new programs need to be developed at this time to handle special wastes accepted at City and County facilities. Any diversion of special wastes is not expected to contribute to the 25 and 50 percent goals, as generated tires make up a small percentage of the total wastestream and an increase in diversion is expected with the two new businesses, all generated sewage sludge is being stockpiled, and medical waste was not found in the City wastestream. Furthermore, quantities of special waste are typically minimal in comparison with other materials in the wastestream.

Tires

Current methods of handling tires through existing commercial operations, in combination with stockpiling, will be continued until such time as other recycling and/or reuse programs and technologies are required and feasible for Santa Maria. These existing activities presently meet the needs of jurisdictions in the County and comply with all applicable regulations. As determined in the Waste Generation Study, Santa Maria diverted 704 tons of tires in 1990.

Sewage Sludge

The selected alternative for sewage sludge management is a combination of continued practice of stockpiling and an examination of land spreading and the potential and feasibility of a co-composting program.

Medical Waste

Because medical waste cannot be recycled and source reduction will reduce wastes only minimally, the selected medical waste management alternative is to continue to support the incineration and autoclaving of treatment facilities and require that records of waste generation and treatment be kept onsite for review by City and County health inspectors to further reduce the hazard of disposed medical waste, in accordance with the small quantity generator program being implemented by the County of Santa Barbara, Environmental Health Department. The City will work with the County of Santa Barbara to identify and work with medical waste generators in Santa Maria. As mentioned, no quantity of medical waste was identified in the Waste Generation Study.

6.5 Special Waste Program Implementation

As previously described, existing special waste programs are implemented by the County of Santa Barbara, the City of Santa Maria and commercial enterprises. As no new or expanded programs will be implemented, only minimal costs will be incurred by the City, primarily for staff assistance or support to the County, which cannot be accurately estimated at this time.

Tires

Tires will continue to be collected by the two commercial businesses described, Lakin Tires and Oxnard Tire Recycling. City landfills will monitor disposal records, and recycling and reuse programs will be evaluated as necessary for possible implementation when technologically feasible.

Sewage Sludge

The treatment and stockpiling of sewage sludge will continue according to current practice in conjunction with the City of Santa Maria. The City will coordinate its investigation of potential co-composting programs with the County. The City will provide financial support to the County for a co-composting program if implemented, as appropriate and warranted, and support relevant public education activities.

Medical Waste

The agencies responsible for implementing this alternative will continue to be the City and Santa Barbara County EHD, implementing local policy as well as implementing DHS requirements. The City and Santa Barbara County will evaluate and implement the requirements of the new Medical Waste Management Act (AB 109 and AB 1641). The County will explore the need for additional staff and program materials will be developed for small quantity generator education and enforcement.

Costs associated with County implementation of the Small Quantity Generator program include the cost of identifying and educating new generators and expanding the load check program. Labor and expenses for public education will also be required. Funds from registration permit fees required by AB 109 and AB 1641 will be used to implement the program.

The City will provide assistance identifying the small quantity generators in their jurisdiction and will coordinate with the County EHD in educational activities for small quantity generators.

6.6 Monitoring and Evaluation

6.6.1 Monitoring Methods

This section describes how the County of Santa Barbara and the City of Santa Maria plan to monitor and evaluate the special waste programs.

Methods of quantifying and monitoring achievement of Special Waste programs will include one or more of the following:

1. Perform an additional Waste Generation Study to determine effectiveness of programs.
2. Perform targeted waste characterization studies involving all or a representative sample of generator sites and recycling, composting, transformation, and landfill facilities to measure changes in volume, weight, and hazard of specific materials.
3. Assess changes in the design, production, distribution and or use of selected products and packages.
4. Develop an alternative methodology to quantify and monitor program objectives for submittal to and approval by the LEA and California Integrated Waste Management Board.

In particular, the following tasks will be performed:

The City will monitor the records of tires handled by commercial tire businesses and the quantity of tires being generated to ensure that current practices continue to meet the needs for tire management.

Monitoring of the sewage sludge program will consist of recording daily tonnage of material received at the treatment facility and ensuring that no material is landfilled.

Monitoring for medical waste will focus on determining with greater accuracy the quantity of waste generated and treated prior to landfilling. Monitoring will include summarizing information regarding waste quantities and treatment methods submitted by generators and treatment facilities. Facility source reduction programs and reduced waste quantities will be identified through routine inspections. A record of inspected large quantity generator facilities and frequencies of inspection will be kept.

Evaluation criteria will focus on the reduced hazard of untreated medical waste disposed at landfills. Criteria will include increased number of regulated generators, increased quantities of medical waste treated prior to landfilling, and increased numbers of source reduction programs (including estimated reduced quantities) at individual facilities.

6.6.2 Funding Requirements and Revenue Source

Costs of monitoring and evaluating Special Waste programs will include labor and expenses for staff to develop and maintain records, perform waste characterization and diversion studies, conduct additional public education, and prepare evaluation and status reports. Monitoring and evaluation activities will be funded by tipping fees collected by the City and available each fiscal year.

6.6.3 Contingency Measures

Since no new programs are selected for implementation and current activities will be continued, there should be no measurable shortfalls in achieving goals. The City will provide to the City Council an annual monitoring and evaluation report, similar to the one prepared by the County of Santa Barbara, which will include information regarding the amounts of special wastes accepted for disposal; the results of monitoring and evaluating technological developments in recycling and composting special wastes; and, the feasibility of implementing a previously unknown special waste diversion method according to the evaluation criteria above.

CHAPTER 7 EDUCATION AND PUBLIC INFORMATION COMPONENT

7.0.1 INTRODUCTION

This component identifies objectives and existing conditions, selects program alternatives, and provides a plan for program implementation, and monitoring and evaluation for the City of Santa Maria's education and public information program. Since the City's program is part of a Countywide Education and Public Information Campaign, information on the City's program is discussed in terms of the broader countywide program.

7.1 SUMMARY OF CITY'S ROLE IN COUNTYWIDE PROGRAM

In order for the City's education and public information program to be successful, cost-effective, and consistent with other promotional efforts throughout the County, this Education and Public Information Component recommends that the City of Santa Maria participate in the countywide campaign developed by the Santa Barbara County Division of Solid Waste. The County is developing this countywide umbrella campaign to target the general public, schools, businesses and institutions, and consumers. A slogan and concept will be used in all the educational and promotional materials produced. In this way, a synergistic approach will unite all educational efforts under one promotional image and all activities will support each other.

Under this plan, the City will contribute funds based on population toward the development of the campaign and production of associated materials (flyers, radio, television, newspaper advertisements, and informational brochures). City staff, acting as liaison with the countywide campaign, can incorporate the slogan and concept developed in the main campaign in other City promotional activities. County staff will be responsible for production of materials and placement of advertisements under the countywide campaign. The City will benefit from other countywide efforts, such as informational open houses for various commercial sectors.

The following sections (7.2 - 7.6) list the City's objectives and existing conditions, describe the program selected, and provide implementation and monitoring and evaluation information. These sections are then followed by information on the Countywide Education and Public Information Campaign.

7.2 CITY EDUCATION AND PUBLIC INFORMATION OBJECTIVES

The education and public information program will target the following solid waste generators:

1. general public;
2. schools;
3. businesses/institutions; and
4. consumers.

The City's short and medium-term objectives are:

1. To increase awareness of and participation in recycling by City residents, which will result in an increase in the number of people recycling in the City;
2. To increase the number of commodities residents recycle, as well as the overall amount of commodities recycled, to result in an increased level of recycling in the City;
3. To increase the awareness of and participation in source reduction and composting methods among City residents, which will result in an increase in the number of people practicing source reduction and composting methods in the City; and
4. To coordinate with and actively participate in the Countywide Education and Public Information Campaign.

7.3 CITY EXISTING CONDITIONS

Existing education and public information programs affecting the City population are discussed in detail within Section 7.9 of this component (Countywide Existing Conditions). In Section 7.9, existing conditions information is presented in four categories: general public information, school education and outreach, business/institutional education, and consumer education. Within each of these four areas, the key organizations involved are identified, their activities are summarized, and the jurisdictions benefiting from their programs are identified. In order for it to be easier to identify which activities discussed in Section 7.9 affect the City of Santa Maria, a summary is provided below; specific details on the activities listed below can be found in Section 7.9.

The existing education and public information programs affecting the City of Santa Maria include:

- 1) **General Public Information:** Information about existing recycling programs may be reaching residents through newspapers, such as *The Santa Maria Times*;
- 2) **School Education and Outreach:** Several schools have paper recycling programs, with bags and stands provided by the Vocational Training Center;
- 3) **Business and Institutional Education:** Office paper recycling programs have been established in City businesses through the Vocational Training Center; and
- 4) **Consumer Education:** There are no current activities in this program area.

7.4 CITY SELECTION OF ALTERNATIVES

This section discusses the City's selected education and public information program. The program is broken into four areas: general public information, school education and outreach, business/institutional education, and consumer education. In each of the areas, a summary of the general countywide approach is given, followed by a breakdown of what will be the respective roles of the County and the City. Countywide and City specific costs are also provided and are summarized in Tables 7.4(a) through 7.4(h), located at the end of this section.

7.4.1 GENERAL PUBLIC INFORMATION

A professional media campaign will be the basis from which all other recycling promotions in the County will be launched. The campaign will center on the slogan, *Recycle — It's Habitat Forming*. This slogan was chosen because it ties recycling to environmental concerns while suggesting the importance of making recycling a habit. In this way, the campaign will be able to target:

1. people who have never recycled or practiced source reduction methods, but are willing to now because of environmental awareness; and
2. people currently recycling on a limited basis but who are receptive to expanding their recycling to other commodities and other methods.

A creative concept will be developed that supports the slogan. The concept will then be used in all elements of the campaign for consistency. The slogan and concept will identify for residents countywide the wise choices of recycling, composting, and source reduction. The slogan and concept will be first established in a 30-second television commercial that will air as a PSA and a paid commercial on television stations serving the County. The television spot will be a high-quality, strongly visual commercial establishing the media campaign. A press conference will be held concurrently to announce the new media campaign. The concept and slogan established in the television spot will be easily adapted to the other targeted elements of the component, as well as the County's current promotion effort. This will be supported by newspaper ads that use the slogan and concept to establish the source reduction and recycling message as a habit worth developing at the curb, the office, in the backyard, and at the grocery store. Radio advertising and other print media, such as school posters and business recycling brochures, will also center on the slogan and concept.

This media approach will help to achieve a high level of public awareness. Children will see the slogan and concept in use on recycling bins and posters at school as well as at home on the television. A businesswoman who recycles at home may see an advertisement in the newspaper about backyard composting and become interested in that program. As her awareness of and interest in recycling and source reduction grows, she may add other methods and commodities to her recycling "habit." Continuing efforts will include further development of the slogan and concept through local media programs and adaptation of the promotional campaign to reach the Spanish-speaking community.

Production Elements Provided by the County (General Public Information):

- a media plan for television, print and radio;
- development of a 30-second television commercial (and PSA);

- placement of television commercials and PSAs directed toward City of Santa Maria residents;
- development of a newspaper ad campaign in support of the general concept, directed toward City of Santa Maria residents;
- development of radio campaigns in support of the general concept, directed toward City of Santa Maria residents;
- ongoing placement of newspaper ads and radio spots and PSAs, directed toward City of Santa Maria residents; and
- adaptation of television, radio and newspaper spots into Spanish whenever possible.

Suggested City Support:

- appearances on radio and television programs in support of the general campaign (in coordination with County staff);
- organization of press conferences promoting the general campaign and dissemination of press releases (in coordination with County staff).

Program Costs: As shown in Table 7.4(a) and Table 7.4(e), the overall countywide budget for production and implementation of general public information is \$65,000 (for 1991) and \$7,500 for monitoring and evaluation. The City's share of this budget is approximately \$10,205 for production and implementation and \$1,180 for monitoring and evaluation. Thus, the total City cost for coordinating with and benefiting from the general public information component of the countywide campaign is estimated at \$11,385 (in 1991). This estimated cost varies slightly from year to year, as shown in Tables 7.4(a) and 7.4(e).

7.4.2 SCHOOL EDUCATION & OUTREACH

Various approaches will be taken in the countywide program, including increasing educational efforts at schools through: development of motivational presentations for various grade levels; provision of curricula and videos to teachers on request; and helping in either establishing or bolstering office paper recycling projects in the schools. School education and outreach efforts will employ the use of the slogan and concept established in the general public media campaign whenever possible. The best way to learn is by doing and beginning recycling in the school at an early age is likely to set a pattern that will be carried into adulthood. When a student recycles at school, it is likely he/she will want to continue in college and/or work.

The countywide campaign approach is to provide educational outreach and promotion of office paper recycling in schools through a pilot program. The pilot program will serve 10 to 12 schools in the Santa Barbara School District (including schools in Santa Barbara and unincorporated areas) in the 1991/92 school year. Schools in the City of Santa Maria, other cities, and unincorporated areas will be added during the next three years, so that all schools interested in participating in the County program will be included in the program by 1995. Schools will be included in the program each year, based on level of interest and the availability of collection for the recyclables. The County program will include the provision of:

- classroom recycling bins;
- instructional bilingual bin labels;
- bilingual posters; and
- bilingual educational flyers.

All educational material will carry the slogan and visual concept of the general campaign. The posters and flyers will be developed to reach two main grade levels: elementary school and junior high/high school. The bin labels, one for white paper and another for colored paper, will include brief instructions on what is recyclable and what is not (and thus should not be placed in the bins). The posters will serve in a sense as the "masthead" of the program and will be artistic, colorful and motivational. A series of five flyers will be used to educate on source reduction and recycling methods and to encourage ongoing participation in the program.

A press conference will be held at the inception of the pilot program to promote the program and to gain the interest of other schools. The program will be expanded each year to include more schools in the cities and unincorporated areas. An informal task force of teachers, recycling coordinators, community recycling activists and program coordinators will meet two to three times a year to assist in developing and shaping the program as more schools are added. Educational presentations will be offered as part of the program. The presentations will be coordinated through the Recycling Coordinator at each of the participating schools. Pre-visit materials will be distributed to the teachers interested in participating. Presentations will then be given to the students by program staff.

The school education and outreach program will feature an information library. The library will take advantage of the vast pool of educational resources available throughout the country. This resource center will feature an assortment of educational videos for classroom viewing, as well as curricula and activity alternatives and environmental contacts. Recycling coordinators at participating schools may request any variety of the materials for use in their schools.

Production Elements Provided by the County (School Education and Outreach):

- ordering of classroom bins for the outreach program;
- production of bilingual bins labels;
- production of posters;
- assistance to schools in setting up the office paper recycling bins and posters in the schools;
- production of a series of flyers directed at grade school and junior high/high school;
- provision of recycling presentations to classes in schools on request;
- maintenance of a library of video and curricula material to be made available to teachers on request; and
- coordination between the schools, the recycling collector and the County to assure smooth operation of the program.

Suggested City Support:

- participation in an advisory task force of teachers, recycling activists, school administrators and County and City representatives;
- assistance in coordinating the program within City schools when needed;
- ongoing promotion of the program through radio, television and newspaper interviews and dissemination of press releases (in coordination with County staff).

Program Costs: As shown in Table 7.4(b) and Table 7.4(f), the overall countywide budget for production and implementation of school education and outreach (for 1991) is \$15,000 and \$5,000 for monitoring and evaluation. The City's share of this budget, once City schools are included, will be based on per capita of the total budget and is estimated at \$1,760 for production and implementation and \$785 for monitoring and evaluation. Thus, the total City cost for coordinating with and benefiting from the school education and outreach component of the countywide

campaign is estimated at \$2,545 (in 1991). This estimated cost varies slightly from year to year, as shown in Tables 7.4(b) and 7.4(f).

7.4.3 BUSINESS AND INSTITUTIONAL EDUCATION

An outreach program to businesses and institutions will be designed that will reach four sectors:

1. Office-oriented businesses;
2. Commercial businesses;
3. Restaurants, hotels and bars; and
4. Industrial and construction businesses.

Direct mail and newspaper ads, using the slogan and concept of the general media campaign, will be used to promote business and institutional recycling and enlist interest. Brochures featuring recycling and source reduction methods will be developed for each sector listed above. After-work open houses will be held for each sector, wherein experts will be available to answer questions and help those interested in establishing recycling and source reduction programs in their businesses. Information will be available on obtaining recycling bins, establishing collection practices and beginning in-house education in recycling. A countywide business recycling task force will be established to help other businesses set up recycling programs. Press releases and press conferences will be held throughout the year to bring attention to recycling and source reduction approaches in businesses and institutions.

Production Elements Provided by the County (Business/Institutional Education):

- production of brochures aimed at the four target groups for use by City of Santa Maria businesses and institutions;
- development of newspaper ads and direct mail appeals ;
- development of radio spots to promote business and institutional recycling;
- ongoing placement of newspaper and radio ads and PSAs to reach City of Santa Maria businesses and institutions;
- organization and hosting of after-work recycling and source reduction open houses for City of Santa Maria businesses and institutions;
- establishment of a countywide business recycling task force;
- development of a plan to reach businesses and institutions catering to the Spanish-speaking community in the City of Santa Maria;
- provision of public awards for excellence in source reduction and recycling in the business and institutional sector; and
- development of press releases and press conferences to bring attention to business and institutional recycling and source reduction.

Suggested City Support:

- participation in the business recycling task force;
- assistance in organizing open houses held to reach City of Santa Maria businesses and institutions;
- development and promotion of a recycling program for City offices and other City operations; and
- ongoing promotion of the program through radio, television and newspaper interviews, as well as dissemination of press releases (in coordination with County staff).

Program Costs: As shown in Table 7.4(c) and Table 7.4(g), the overall countywide budget for production and implementation of business and institutional education (for 1991) is \$24,500 and \$5,000 for monitoring and evaluation. The City's share of this budget is approximately \$3,845 for production and implementation and \$785 for monitoring and evaluation. Thus, the total City cost for coordinating with and benefiting from the business and institutional component of the countywide campaign is estimated at \$4,630 (in 1991). This estimated cost varies slightly from year to year, as shown in Tables 7.4(c) and 7.4(g).

7.4.4 CONSUMER EDUCATION

The consumer education campaign will be directed toward raising awareness of the need for consumers to adopt recycling, source reduction and composting methods. Newspaper and radio ads will be developed, using the slogan and concept from the general media campaign, to promote various ways of reducing, reusing and recycling. In-store promotions will be used to promote source reduction methods. Sponsorship of radio programs will be sought for ongoing promotion of source reduction and recycling methods.

Production Elements Provided by the County (Consumer Education):

- development of a newspaper advertising campaign following the general concept and slogan;
- development of radio advertising campaign following the general concept and slogan;
- ongoing placement of newspaper ads to reach City of Santa Maria residents;
- ongoing placement of radio spots and PSAs to reach City of Santa Maria residents;
- in-store promotions in City of Santa Maria businesses; and
- development of sponsorship of radio programs to reach City of Santa Maria residents.

Suggested City Support:

- ongoing promotion of the program through radio, television, newspaper interviews and dissemination of press releases (in coordination with County staff).

Program Costs: As shown in Table 7.4(d) and Table 7.4(h), the overall countywide budget for production and implementation of consumer education (for 1991) is \$24,500 and \$5,000 for monitoring and evaluation. The City's share of this budget is approximately \$3,845 for production and implementation and \$785 for monitoring and evaluation. Thus, the total City cost for coordinating with and benefiting from the consumer education component of the countywide campaign is estimated at \$4,630 (in 1991). This estimated cost varies slightly from year to year, as shown in Tables 7.4(d) and 7.4(h).

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (a)

**General Public Information Program
Annual Production and Implementation Budget**

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 27495	\$ 28870	\$ 30315	\$ 31830	\$ 33425
City of Santa Barbara	14820	15560	16340	17150	18010
City of Carpinteria	2275	2390	2510	2635	2770
City of Solvang	780	820	860	905	1000
City of Lompoc	6240	6550	6880	7225	7590
City of Santa Maria	10205	10715	11250	11810	12400
City of Guadalupe	1040	1090	1145	1200	1260
Vandenberg AFB	1430	1500	1575	1650	1735
TOTAL	\$ 64285	\$ 67495	\$ 70875	\$ 74405	\$ 78190
	**(\$65,000)	(\$68,250)	(\$71,750)	(\$75,350)	(\$79,125)

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (b)

**School Education and Outreach Program
Annual Production and Implementation Budget**

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 6620 *	\$ 7995 *	\$ 5090	\$ 5345	\$ 5615
City of Santa Barbara	4530 *	2650	2780	2920	3070
City of Carpinteria	440	1285 *	485	510	535
City of Solvang	110	240 *	120	125	135
City of Lompoc	1100	4175 *	1210	1260	1325
City of Santa Maria	1760	5850 *	1940	2040	2145
City of Guadalupe	220	505 *	240	250	265
Vandenberg AFB	220	505 *	240	250	265
TOTAL	\$ 15000	\$ 23205	\$ 12105	\$ 12700	\$ 13355
	**(\$15,000)	(\$24,000)	(\$12,125)	(\$12,730)	(\$13,775)

* Includes bin capitalization costs.

** The figures on the bottom lines of both charts represent the total from which percentages were derived for the County of Santa Barbara and cities within the County. Percentages of population are as follows: unincorporated areas of the County of Santa Barbara, 42.3%; City of Santa Barbara, 22.8%; Carpinteria 35%; Solvang, 1.2%; Lompoc, 9.6%; Santa Maria 15.7%; Guadalupe, 1.6%; Vandenberg Air Force Base, 22% and the federal penitentiary, 5%. The difference between the figures represented in the TOTAL line and this line on both charts is the result of not including the federal penitentiaries in the calculations and a general rounding off of percentages.

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (c)

Business Education Program

Annual Production and Implementation Budget

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 10365	\$ 10885	\$ 11430	\$ 12000	\$ 12600
City of Santa Barbara	5585	5865	6160	6470	6795
City of Carpinteria	860	905	950	1000	1050
City of Solvang	295	310	325	340	360
City of Lompoc	2350	2470	2595	2725	2860
City of Santa Maria	3845	4040	4240	4450	4675
City of Guadalupe	390	410	430	450	475
Vandenberg AFB	540	570	600	630	690
TOTAL	\$ 24230	\$ 25455	\$ 26730	\$ 28065	\$ 29725
	**(\$24,500)	(\$25,725)	(\$27,000)	(\$28,350)	(\$29,725)

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (d)

Consumer Education Program

Annual Production and Implementation Budget

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 10365	\$ 10885	\$ 11430	\$ 12000	\$ 12600
City of Santa Barbara	5585	5865	6160	6470	6795
City of Carpinteria	860	905	950	1000	1050
City of Solvang	295	310	325	340	360
City of Lompoc	2350	2470	2595	2725	2860
City of Santa Maria	3845	4040	4240	4450	4675
City of Guadalupe	390	410	430	450	475
Vandenberg AFB	540	570	600	630	690
TOTAL	\$ 24230	\$ 25455	\$ 26730	\$ 28065	\$ 29725
	**(\$24,500)	(\$25,725)	(\$27,000)	(\$28,350)	(\$29,725)

** The figures on the bottom lines of both charts represent the total from which percentages were derived for the County of Santa Barbara and cities within the County. Percentages of population are as follows: unincorporated areas of the County of Santa Barbara, 42.3%; City of Santa Barbara, 22.8%; Carpinteria 35%; Solvang, 1.2%; Lompoc, 9.6%; Santa Maria 15.7%; Guadalupe, 1.6%; Vandenberg Air Force Base, 2.2% and the federal penitentiary, .5%. The difference between the figures represented in the TOTAL line and this line on both charts is the result of not including the federal penitentiaries in the calculations and a general rounding off of percentages.

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (e)

**General Public Information Program
Annual Monitoring and Evaluation Budget**

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 3175	\$ 3335	\$ 3500	\$ 3675	\$ 3860
City of Santa Barbara	1710	1795	1885	1980	2080
City of Carpinteria	265	280	295	310	325
City of Solvang	90	95	100	105	110
City of Lompoc	720	755	795	835	880
City of Santa Maria	1180	1240	1300	1365	1435
City of Guadalupe	120	125	130	135	145
Vandenberg AFB	165	175	185	195	205
TOTAL	\$ 7425	\$ 7800	\$ 8190	\$ 8600	\$ 9040
	**(\$7,500)	(\$7,875)	(\$8,275)	(\$8,700)	(\$9,135)

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (f)

**School Education and Outreach Program
Annual Monitoring and Evaluation Budget**

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 2115	\$ 2220	\$ 2330	\$ 2445	\$ 2570
City of Santa Barbara	1140	1200	1260	1325	1395
City of Carpinteria	175	185	195	205	215
City of Solvang	60	65	70	75	80
City of Lompoc	480	505	530	555	585
City of Santa Maria	785	825	865	910	955
City of Guadalupe	80	85	90	95	100
Vandenberg AFB	110	115	125	135	145
TOTAL	\$ 4945	\$ 5200	\$ 5465	\$ 5745	\$ 6045
	**(\$5,000)	(\$5,250)	(\$5,525)	(\$5,800)	(\$6,090)

** The figures on the bottom lines of both charts represent the total from which percentages were derived for the County of Santa Barbara and cities within the County. Percentages of population are as follows: unincorporated areas of the County of Santa Barbara, 42.3%; City of Santa Barbara, 22.8%; Carpinteria 35%; Solvang, 1.2%; Lompoc, 9.6%; Santa Maria 15.7%; Guadalupe, 1.6%; Vandenberg Air Force Base, 2.2% and the federal penitentiary, .5%. The difference between the figures represented in the TOTAL line and this line on both charts is the result of not including the federal penitentiaries in the calculations and a general rounding off of percentages.

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (g)

Business Education Program

Annual Monitoring and Evaluation Budget

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 2115	\$ 2220	\$ 2330	\$ 2445	\$ 2570
City of Santa Barbara	1140	1200	1260	1325	1395
City of Carpinteria	175	185	195	205	215
City of Solvang	60	65	70	75	80
City of Lompoc	480	505	530	555	585
City of Santa Maria	785	825	865	910	955
City of Guadalupe	80	85	90	95	100
Vandenberg AFB	110	115	125	135	145
TOTAL	\$ 4945	\$ 5200	\$ 5465	\$ 5745	\$ 6045
	**(\$5,000)	(\$5,250)	(\$5,525)	(\$5,800)	(\$6,090)

**Public Information and Education Campaign
County of Santa Barbara and Cities**

Table 7.4 (h)

Consumer Education Program

Annual Monitoring and Evaluation Budget

	1991	1992	1993	1994	1995
County of Santa Barbara	\$ 2115	\$ 2220	\$ 2330	\$ 2445	\$ 2570
City of Santa Barbara	1140	1200	1260	1325	1395
City of Carpinteria	175	185	195	205	215
City of Solvang	60	65	70	75	80
City of Lompoc	480	505	530	555	585
City of Santa Maria	785	825	865	910	955
City of Guadalupe	80	85	90	95	100
Vandenberg AFB	110	115	125	135	145
TOTAL	\$ 4945	\$ 5200	\$ 5465	\$ 5745	\$ 6045
	**(\$5,000)	(\$5,250)	(\$5,525)	(\$5,800)	(\$6,090)

** The figures on the bottom lines of both charts represent the total from which percentages were derived for the County of Santa Barbara and cities within the County. Percentages of population are as follows: unincorporated areas of the County of Santa Barbara, 42.3%; City of Santa Barbara, 22.8%; Carpinteria 35%; Solvang, 1.2%; Lompoc, 9.6%; Santa Maria 15.7%; Guadalupe, 1.6%; Vandenberg Air Force Base, 2.2% and the federal penitentiary, .5%. The difference between the figures represented in the TOTAL line and this line on both charts is the result of not including the federal penitentiaries in the calculations and a general rounding off of percentages.

7.5 CITY IMPLEMENTATION OF ALTERNATIVES

Responsibility: General Public Information, School Education and Outreach, Business and Institutional Education, and Consumer Education programs will be implemented primarily through the County of Santa Barbara, Solid Waste Division, Public Information Specialist. Subcontractors will assist in production of television, print and radio media when necessary. The City of Santa Maria will be responsible for coordinating with the County where necessary, disseminating certain information, and participating in local task forces.

Implementation Tasks and Schedules: As Section 7.4 above indicates, City staff will be working closely with County staff and coordinating with the countywide campaign and its schedule. Section 7.11 (Program Implementation) provides a complete list of the implementation tasks and schedules for the four program areas of the countywide campaign (general public information, school education and outreach, business/institution education, and consumer education). The specific tasks that City staff will do in working with the County have been outlined in Section 7.4 for each program area (under Suggested City Support). Thus, the City's programs will follow the schedules in Section 7.11, with City staff working in conjunction with the County program and staff, as specified in Section 7.4.

Costs and Revenues: The costs for implementation of each of the selected alternatives are summarized in Tables 7.4(a) through 7.4(d). Refer to the Funding Component of this SRRE for information on revenues and revenue sources for implementation of the selected alternatives.

7.6 CITY MONITORING AND EVALUATION

Monitoring Methods: A survey will be used to determine the impact that the general campaign has had on the public and to gauge the effectiveness of the various programs. Monitoring methods are explained in detail in Section 7.12 (Monitoring and Evaluation) of this component.

Criteria For Evaluation: For the General Public Information and School Education and Outreach programs, the criteria for evaluation will include: a) the level of participation in SRRE programs; b) the level of community (residents and businesses) awareness of SRRE programs; and c) the cost effectiveness of the programs. For the Business and Institutional Education program, the criteria will include: a) the number of new businesses that establish recycling and reduction programs; b) the addition of commodities being recycled in existing programs; and c) overall recycling levels. For Consumer Education, the criteria will include: a) the level of increased recycling and source reduction practiced among City residents; and b) the effectiveness of the consumer education campaign (both to be determined by telephone surveys).

Responsible Agencies: The County of Santa Barbara Public Works Department, Division of Solid Waste, will work with the City to conduct all necessary monitoring and evaluation of education and public information programs.

Funding Requirements, Revenues, and Revenue Sources: The funding requirements for monitoring and evaluation of each of the selected alternatives are summarized in Tables 7.4(e) through 7.4(h). Refer to the Funding Component of this SRRE for information on revenues and revenue sources for monitoring and evaluation.

Contingency Measures: Contingency measures, if monitoring efforts show a shortfall in attainment of diversion objectives, are outlined in detail for each of the program areas in Section 7.12 (Monitoring and Evaluation) of this component.

Monitoring and Evaluation Schedule: All monitoring and evaluation data will be detailed as part of the annual report on the SRRE programs; the report will be submitted to the Board of Supervisors and the CIWMB. The monitoring and evaluation schedules for each of the program areas are provided in Section 7.12 (Monitoring and Evaluation) of this component.

7.7 INTRODUCTION TO COUNTYWIDE CAMPAIGN

The County of Santa Barbara has supported education and public information programs related to various solid waste projects and goals for several years, including the promotion of buyback centers, curbside recycling, and school programs. Future plans call for continuation and development of current promotion and public information efforts as well as the creation of new, more far-reaching efforts that will include consumer education and business and institutional recycling.

A general media campaign will be developed that will establish a slogan and concept. This concept will be visualized and the design and slogan will be used in all educational and promotional material produced by and for the County. In this way, a synergistic approach will unite all recycling, composting and source reduction efforts under one promotional image and promotional activities will support and reflect each other.

7.8 COUNTY EDUCATION AND PUBLIC INFORMATION OBJECTIVES

The following solid waste generators will be targeted in the countywide educational and public information programs: general public; schools; businesses and institutions; and consumers.

The countywide short and medium-term objectives are:

1. To increase the awareness of and participation in recycling by County residents, which will result in an increase in the number of people recycling in the County;
2. To increase the number of commodities residents recycle, as well as the overall amount of commodities recycled, to result in an increased level of recycling in the County; and
3. To increase the awareness of and participation in source reduction and composting methods among County residents, which will result in an increase in the number of people practicing source reduction and composting methods in the County.

7.9 COUNTYWIDE EXISTING CONDITIONS

This section summarizes existing education and public information activities throughout the County of Santa Barbara. Activities are presented in four areas: general public information, school education and outreach, business/institutional education, and consumer education. In each of the four areas, the key organizations are identified, their activities are summarized, and the jurisdictions targeted by the programs are specified.

7.9.1 EXISTING COUNTYWIDE GENERAL PUBLIC INFORMATION

The following organizations play a role in recycling education and promotion in the County of Santa Barbara:

- * County of Santa Barbara Public Works Department, Solid Waste Management Division
- * The Community Environmental Council (CEC)
- * Valley Recycling, a subsidiary of Health Sanitation Services
- * Vocational Training Center

The County of Santa Barbara

The education and public information elements of all programs administered by the County of Santa Barbara Public Works Department, Division of Solid Waste Management, are coordinated by the division's Public Information Specialist. County promotional efforts have supported the following projects in 1990/1991:

Earth Day: In April 1990, the County, in association with the Community Environmental Council (CEC), coordinated an exhibit for a day-long event held on the grounds of Santa Barbara City College that attracted a crowd of approximately 20,000 people. The exhibit featured "Trash-o-Rama," a maze of trash that was used to bring awareness to the waste crisis, its issues and potential solutions. It received local television and newspaper coverage. "Trash-o-Rama II--the Waste Game," an electronic quiz game, was the center of the County's promotional activities for the 1991 Earth Day celebrations in Santa Barbara. The promotion targets the City of Santa Barbara and the surrounding unincorporated areas; residents from the City of Carpinteria may have also attended the festivities.

Office Paper Recycling: The County's Office Paper Recycling Program serves several County offices and is promoted through posters and educational handouts. The program description can be found in the existing conditions of the Recycling Component of this SRRE. The program targets County offices located in the City of Santa Barbara and the unincorporated area of Goleta.

Telephone Book Recycling: The County's telephone book recycling program, established in 1988, featured an increased promotional campaign in 1990, which helped the program achieve a 60-percent increase over the previous years' results. The campaign also received an Addy award in the category of Public Service Campaign. Promotional elements included in the campaign were: radio and print advertising; PSAs; press releases; a press conference; posters; and giveaways to recyclers (1,200 cactus plants were given away to participants). The program targets residences

and businesses in the City of Santa Barbara, the City of Carpinteria, and the surrounding unincorporated areas. The 1991 program also targeted the City of Solvang and its surrounding unincorporated areas.

County Recycling Line: In 1990, an information line was established in the County's Solid Waste Management Division to address any questions that the public might have about its programs. The line provides general recycling information, as well as current program-specific information. The Recycling Line number is featured in County promotional efforts. Incoming calls are monitored to help gauge the effectiveness of promotions. The hotline is currently known to residents of the City of Santa Barbara, the City of Carpinteria and the surrounding unincorporated areas. Its existence will become more widely known as programs are expanded Countywide.

Christmas Tree Recycling: In its first year, 1990, promotion of the Christmas Tree Recycling resulted in the recycling of more than 6,000 trees, and the diversion of more than 45 tons from the landfill. Promotional campaign elements were: radio and print advertising; PSAs; press releases; a press conference; posters; point of purchase advertising; and a giveaway day (1,200 cactus). The trees were chipped and the resulting mulch was used as ground cover in the parks and at the Santa Barbara Zoo. This made for an interesting follow-up story, which was picked up by local television and radio stations. This program targets the City of Santa Barbara, the City of Carpinteria, the City of Solvang, and the surrounding unincorporated areas.

Toilet Recycling: This innovative program was established by the County of Santa Barbara Public Works Department, Division of Solid Waste Management, in response to the number of toilets being replaced with water-saving models (due to local drought conditions). The program is promoted through press releases. It has received media coverage from *The Santa Barbara News-Press*, *The Santa Barbara Independent*, *The Wall Street Journal*, *California Magazine*, *Governing Magazine*, *The New York Times*, *National Geographic*, the Environmental Protection Agency's *Pollution Prevention News*, and Associated Press International. The program targets residents of the City of Santa Barbara, the City of Carpinteria, and the surrounding unincorporated areas.

Backyard Composting Program: The County's Backyard Composting Pilot Program was established in 1991. The program was organized through a CEC intern and is being promoted by the County's Public Information Specialist. Promotional elements include: direct mail brochures to encourage participation; press releases; and informational (how-to) brochures and flyers. The pilot program targets two neighborhoods in the City of Santa Barbara and two neighborhoods in the unincorporated area of Goleta.

The Community Environmental Council

CEC established a recycling center in the City of Santa Barbara in 1974 and has operated this center and other centers in the South County continuously since that time, providing recycling education and promotion in support of its programs. Most of the recycling promotion in the South County in the last few years has been directed through CEC staff, funded from the County of Santa Barbara, Solid Waste Management Division, and the State of California Department of Conservation, Division of Recycling.

CEC General Promotions: CEC promotions have included:

- * purchase of newspaper ads;
- * direct mail coupons;
- * radio ads and PSAs;
- * an English/Spanish recycling brochure;
- * various flyers promoting CEC's many projects;
- * development and placement of a 30-second television PSA on recycling; and
- * press conferences and press releases.

General promotional activities target the City of Santa Barbara, the City of Carpinteria and the surrounding unincorporated areas.

Approximately 10 press releases have been issued by CEC on recycling issues each year since 1986; an average of three press conferences have been held per year since 1986. These press conferences have varied in theme. One successful event, held in conjunction with a source reduction seminar at CEC's Gildea Resource Center, was sited at the South Coast Transfer Station, where mounds of garbage were used to illustrate one person's yearly generation of waste and the average family's yearly waste generation.

In 1987, a 30-second PSA was developed by CEC to promote recycling. Funded by area waste haulers, the commercial was aired on County television stations and was adapted for use as a promotional "trailer" for several months at the Victoria Street movie theater in the City of Santa Barbara.

CEC Project Specific Promotions: Promotion of the County of Santa Barbara's curbside recycling program is coordinated through CEC using doorhangers, brochures, and direct mail. In 1990, a newsletter, entitled POSTer, was developed and is sent to all curbside recyclers on a quarterly basis. The curbside promotion targets those residents in the City of Santa Barbara, the City of Carpinteria, and the surrounding unincorporated areas serviced by the program.

CEC has received grants to promote recycling from the California Department of Conservation (DOC), Division of Recycling. Promotions funded through the DOC have included:

- * grocery store flyers to promote beverage container recycling;
- * a radio and print campaign centered around Earth Day;
- * an anti-litter/recycling campaign for the City of Santa Barbara, which included development of a slogan, "Come Clean, Santa Barbara," and a city-wide cleanup culminating in a recycling fair.

For 1991, the DOC funded a recycling promotion project that includes placement of newspaper and radio ads in local media and a recycling outreach to the Spanish-speaking community. This promotion, co-sponsored by the County of Santa Barbara, also included a poster contest and culminated in a recycling fair held on Earth Day 1991 at Santa Barbara's Casa de la Raza. The DOC funding promotions target the City of Santa Barbara, the City of Carpinteria, and the surrounding unincorporated areas.

Valley Recycling

Valley Recycling, a subsidiary of Health Sanitation Service, is centered in the City of Santa Maria and serves the City of Solvang, and the unincorporated areas of Orcutt, Tanglewood, Santa Ynez, Solvang, Los Olivos, Buellton, Los Alamos and Ballard. Promotional activities have been directed mainly toward obtaining media coverage. Press releases and personal contact resulted in 26 stories in 1990, which appeared in *The Santa Barbara News-Press*, *The Santa Maria Times*, *The Santa Ynez Valley News*, and *The Los Padres Sun*.

Valley Recycling's Public Information Specialist (PIO) is available to give presentations to civic groups, governmental agencies and other organizations interested in recycling. PIO presentations were made in a nine-month period in 1990/91 and included a description of the mandates of AB 939.

Valley Recycling operates the County of Santa Barbara residential curbside recycling program for all recipients of Health Sanitation Services' refuse pickup. Initial promotion at the inception of the program (in 1988) included letters and brochures. Current promotion of the curbside program is made primarily through word of mouth. Those interested in participating are sent a brochure and curbside buckets. Other promotional efforts include billing inserts and yard signs. More promotion is called for in future budgets.

Vocational Training Center

Centered in Santa Maria, the Vocational Training Center processes recyclables collected through the County of Santa Barbara's curbside program for the Santa Ynez Valley. The center also serves as a buyback recycling outlet and operates a commercial office paper recycling program. Promotion conducted through the Center has mainly been in the form of solicitation of newspaper articles. The Center has received a matching grant from the County of Santa Barbara and the City of Santa Maria to promote recycling in the area. Promotional activities target the City of Santa Maria, the City of Solvang, and the surrounding unincorporated areas.

7.9.2 EXISTING COUNTYWIDE SCHOOL EDUCATION AND OUTREACH

Education and outreach to schools in the County of Santa Barbara is being provided by the following:

- * The Community Environmental Council (CEC), through funds from the County of Santa Barbara Solid Waste Management Division
- * Valley Recycling
- * Vocational Training Center
- * Project Public Service

The Community Environmental Council

The CEC has been providing educational outreach to schools in the City of Santa Barbara, the City of Carpinteria and the surrounding unincorporated areas since the 1970s. Currently, an intern supported through County funds is assigned to devote at least half of his/her time to education and outreach to the schools. Outreach includes educational presentations, assistance in establishing office paper recycling, and ongoing communication with schools, including provision of educational videos and recycling curricula. CEC currently provides an average of 20 to 30 lectures a year. Educational videos, which CEC makes available to the schools, are requested on average about 5 times a year. CEC also offers a list of various environmental curricula to schools.

CEC has encouraged the establishment of recycling programs at area schools and currently provides many schools with bins and pickup service. Since 1978, CEC has operated a monthly newspaper pick-up program at South County schools. In the past few years several schools have increased their recycling efforts; many are now recycling white and colored ledger paper, computer paper and aluminum. At the beginning of the 1990/91 school year, CEC had recycling accounts with approximately 30 schools.

Valley Recycling

Beginning around 1989, Valley Recycling established educational outreach to schools in that company's service area, including unincorporated areas in the North County and the City of Solvang. The Valley Recycling PIO has organized a list of recycling-related exercises and activities by grade level, including materials from Oscar's Options, 4-H Reuse, Recycle, and Ithaca Recycles. The PIO sends a sample of appropriate activities to school superintendents, who pass them on to teachers. Teachers interested in having a recycling presentation in their classroom respond by suggesting what activity might be most appropriate and the PIO leads the class in the chosen exercise or activity. In 1990, 18 classrooms participated in the program in four schools. Plans are to reach 40 to 50 classrooms in an additional six schools in 1991.

Vocational Training Center

The Center provides recycling bags and stands for paper recycling programs and collects the recyclables in approximately 10 schools in the North County, including schools in the City of Santa Maria, Orcutt and other unincorporated areas. Plans are being made to include the entire Lompoc School District in the office paper recycling program.

7.9.3 EXISTING COUNTYWIDE BUSINESS/INSTITUTIONAL EDUCATION

Promotion and outreach to businesses and institutions have been conducted by the following:

- * The County of Santa Barbara
- * The Community Environmental Council (CEC)
- * Vocational Training Center

The County of Santa Barbara

The County promotes its in-house office paper recycling program through posters and inter-office communication. An incentives program is being developed that will reward participating offices with promotional gifts.

The Community Environmental Council

CEC has developed a successful office paper recycling program over more than a decade. The organization provides help to South County businesses interested in establishing an office paper program; this includes a how-to manual developed by the CEC Publications Program for those interested in setting up their own program. CEC recycling center staff estimates that office paper recycling has doubled in the greater Santa Barbara area in the last two years. They attribute this increase to promotions centered around Earth Day and articles on recycling that have appeared recently in the local newspaper, *The Santa Barbara News-Press*.

CEC also picks up office paper at the University of California at Santa Barbara (UCSB) campus. The current program was organized in 1989 by a CEC intern and is now coordinated by a campus recycling coordinator. The Associated Students promote recycling in the University Center through advertisements in the *Daily Nexus*, the college newspaper; the Residents Hall Association promotes recycling in the dormitories; and UCSB's Facilities Management promotes office paper recycling on campus.

Vocational Training Center

The Center established an office paper recycling program about two years ago. Initial promotion was through direct mail (using an area Chamber of Commerce list) and phone calls. Currently the Center services approximately 170 accounts, including several schools, in the City of Santa Maria and surrounding unincorporated areas. In 1990, a mailing that contained an update on the program and a comprehensive paper identification list was sent to those participating in the office paper recycling program.

7.9.4 EXISTING COUNTYWIDE CONSUMER EDUCATION

Consumer education in Santa Barbara County has been conducted by the following:

- * The Community Environmental Council (CEC)

The Community Environmental Council

Most of CEC's consumer education has centered on particular programs, including curbside recycling, beverage container recycling, and buyback center locations, hours and special promotions. CEC's source reduction specialist has been interviewed by local media on source reduction methods. Articles on source reduction have appeared in *The Santa Barbara News-Press* and *The Santa Barbara Independent*. In 1988, CEC produced a bumpersticker with the phrase "Reduce, Reuse, Recycle" that is seen throughout the County.

7.10 SELECTION OF COUNTYWIDE PROGRAM ALTERNATIVES

This section summarizes the selected Countywide Education and Public Information Campaign.

7.10.1 SELECTED COUNTYWIDE GENERAL PUBLIC INFORMATION

A general media campaign will be the basis from which all other recycling promotions in the County will be launched. The campaign will center on the slogan "Recycle--It's Habitat Forming." This slogan was chosen because it ties recycling to environmental concerns while suggesting the importance of making recycling a habit. In this way, the County will be able to target:

1. people who have never participated in recycling, source reduction, or composting practices; and
2. people currently participating in recycling, source reduction, or composting practices on a limited basis but who are receptive to expanding their participation to other commodities and other methods.

A creative concept will be developed that supports the slogan. The slogan and concept will then be used in all elements of the campaign for consistency. The slogan and concept will identify for County residents the wise choices of recycling, composting and source reduction.

The slogan and concept will be first established in a multi-media advertising campaign that will include 30-second television commercials that will run as PSA's, print, radio, outdoor, and point of purchase advertising, and informational brochures. The slogan and concept will be easily adapted to all elements of the campaign. The campaign will be launched in early fall 1991. A press conference will be held concurrently to announce the campaign and the County's stepped-up waste reduction efforts.

The advertising campaign will establish waste reduction (source reduction, recycling, and composting) as a habit to be practice throughout all aspects of residents' daily lives--at the curb, at the office, in the backyard, and at the grocery store.

This synergistic media approach will help us to achieve saturation of public awareness. Children will see the slogan and concept in use in an office paper recycling program at school, as well as at home on the television. A business person who recycles at home may see an ad in the newspaper about backyard composting and become interested in that; as this person's awareness of and interest in recycling and source reduction grows, other methods and commodities may be added to this recycling "habit."

Television was chosen as an information vehicle for several reasons, including:

- * high visibility;
- * high quality of visual message;
- * ability to "blanket" the County;
- * ability to achieve a synergistic media effect by using television to enhance print and radio promotions; and
- * current recycling promos are dependent entirely on radio and print advertising, leaving television wide open.

7.10.2 SELECTED COUNTYWIDE SCHOOL EDUCATION AND OUTREACH

Various approaches will be taken, including increasing the County's educational effort at schools through development of motivational presentations for various grade levels; provision of curricula and videos to teachers on request; and help in either establishing or bolstering office paper recycling projects in the schools. School education and outreach efforts will employ the use of the slogan and concept established in the general public media campaign whenever possible.

Recycling Education and Outreach Program: The County will provide educational outreach and promotion of office paper recycling in schools through a pilot program in area schools. The schools currently participating in the pilot program are:

1. San Marcos High School*
2. Santa Barbara High School*
3. Dos Pueblos High School*
4. Santa Barbara Junior High School*
5. La Cumbre Junior High School*
6. La Colina Junior High School
7. Goleta Valley Junior High School*
8. La Questa Elementary
9. Alternative School*
10. Washington Elementary*
11. Cleveland Elementary
12. Roosevelt Elementary

[* These schools serve students from the unincorporated areas of Santa Barbara County.]

The best way to learn is by doing, and beginning recycling in the school at an early age is likely to set a pattern that will be carried into adulthood. When a student recycles at school, it is likely that those recycling habits will continue through college and/or work.

The program, which will serve 12 schools the first year, will include the provision of:

- * classroom recycling bins,
- * instructional bilingual bin labels,
- * bilingual posters, and
- * bilingual educational flyers.

All educational material will carry the slogan and visual concept of the general campaign. The posters and flyers will be developed to reach two main grade levels: elementary school and junior high/high school. The bin labels (one for white paper; one for colored paper, and one for mixed paper) will include brief instructions on what is recyclable and what is not (and should not be placed in the bins). The posters will serve as a sort of "masthead" of the program and will be artistic, colorful and motivational. A series of five flyers will be used to educate on source reduction and recycling methods and to encourage ongoing participation in the program.

A press conference will be held to announce the pilot school education and outreach program and to gain the interest of other schools. The program will be expanded each year to include more schools in the County. An informal task force of teachers, recycling coordinators, community recycling activists and program coordinators will meet two to three times a year to assist in developing and shaping the program as more schools are added.

CEC has received a grant from the California Department of Conservation, Division of Recycling, that includes the purchase of several 32-gallon outdoor bins for Santa Barbara School District schools. The pilot program of the County's educational outreach program will begin with those schools listed previously and will increase over the following four years to include all County schools interested in the program.

Presentations: Educational presentations will be offered as an element of the Recycling Education and Outreach Program. The presentations will be coordinated through the Recycling Coordinator at each of the participating schools. Pre-visit materials will be distributed to the teachers interested in participating. Presentations will then be given to the students by Outreach Program staff.

Information Library: The Outreach Program will feature an information library. The library will take advantage of the vast pool of educational resources available throughout the country. This resource center will feature an assortment of educational videos for classroom viewing, as well as curricula and activity alternatives and environmental contacts. Recycling coordinators at participating schools may request any variety of the materials for use in their schools.

7.10.3 SELECTED COUNTYWIDE BUSINESS/INSTITUTIONAL EDUCATION

An outreach program to businesses and institutions will be designed that will reach four sectors:

1. Office-oriented businesses;
2. Commercial businesses;
3. Restaurants, hotels and bars; and
4. Industrial and construction businesses.

The slogan and concept will be used to bring attention to recycling, source reduction and composting methods. Direct mail and newspaper ads will be used to promote business and institutional recycling and enlist interest. Brochures featuring recycling and source reduction methods will be developed for each sector listed above. After-work open houses will be held for each sector, wherein experts will be available to answer questions and help those interested in establishing recycling and source reduction programs in their businesses. Information will be available on obtaining recycling bins, collection practices and in-house education on recycling.

A Countywide business recycling task force will be established that will help other businesses in setting up recycling and source reduction programs. Press releases and press conferences will be held throughout the year to bring attention to recycling approaches in businesses and institutions.

7.10.4 SELECTED COUNTYWIDE CONSUMER EDUCATION

The consumer education campaign will be directed toward raising awareness of the need for consumers to adopt recycling, source reduction and composting methods. Newspaper and radio ads will be developed, using the slogan and concept from the general media campaign, to promote various ways of reducing, reusing and recycling. In-store promotions will be used to promote source reduction methods. Sponsorship of radio programs will be sought for ongoing promotion of source reduction and recycling methods.

7.11 PROGRAM IMPLEMENTATION

This section identifies those responsible for implementation of the education and public information campaign, provides tasks and schedules associated with implementation of the programs, as well as program implementation costs and revenue sources.

7.11.1 GENERAL PUBLIC INFORMATION

The program will be implemented through the County of Santa Barbara Public Information Specialist. Subcontractors will assist in production of television, print and radio media when necessary. City staff will work in conjunction with the County, as specified in Section 7.4.1 (under Suggested City Support).

Schedule for Tasks: The television commercial will air on stations throughout the County beginning in the Fall of 1991 and will be used throughout the remainder of 1991 and 1992 and monitored for future use. A press conference will be held to launch the campaign in order to bring attention to the County's "stepped up" efforts to increase source reduction and recycling awareness and participation. Newspaper ads will run in conjunction with the television spot in all major newspapers in the County and radio spots will be developed to run in 1991/92. Press conferences and press releases will be issued as appropriate. Continuing efforts in the short-term will include further development of the slogan and concept through local media programs and adaptation of the promotional campaign to reach the Spanish-speaking community.

GENERAL PUBLIC INFORMATION CAMPAIGN Short-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	June 1991	Obtain and develop 30 second television commercial.
2	July 1991 - Ongoing	Develop media plan for television, print and radio.
3	July 1991 - Ongoing	Develop newspaper campaign in support of general concept.
4	August 1991 - Ongoing	Develop radio campaign in support of general concept.
5	Sept. 1991 - Ongoing	Begin placement of campaign in the media.
6	Sept. 1991 - Ongoing	Organize press conferences and disseminate press releases to promote campaign.
7	June 1995	Determine effectiveness of original campaign and decide whether to expand on it or develop a new approach.

GENERAL PUBLIC INFORMATION CAMPAIGN
Medium-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	September 1996	Begin implementing expanded campaign.
2	(January 1996)	(Begin implementing new approach.)
3	Ongoing	Placement of newspaper, radio and television ads and PSAs.
4	Ongoing	Organization of press conferences and dissemination of press releases.

The media campaign will be expanded through development of a sequel to the original, or a new media concept will be developed as a whole new campaign (depending on the success of the initial campaign). Newspaper ads will be used in support of the electronic media and as much "free" press will be obtained as possible through press releases, press conferences and the placement of PSAs.

Costs: Costs for implementation of the general public information program are summarized in Table 7.4(a), located at the end of Section 7.4 of this component.

7.11.2 SCHOOL EDUCATION AND OUTREACH

This program will be implemented by the Santa Barbara County Public Information Specialist. City staff will work with the County, as specified in Section 7.4.2 (under Suggested City Support).

Schedule for Tasks

SCHOOL EDUCATION AND OUTREACH CAMPAIGN

Short-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	April 1991	Establish working relationship with the Santa Barbara School District for implementing the pilot outreach program.
2	May 1991	Establish an advisory task force and hold first meeting.
3	June 1991	Confirm which schools will participate in the pilot outreach program.
4	June 1991	Order recycling bins for pilot outreach program.
5	June 1991	Identify & meet w/ recycling coordinators for schools in pilot program.
6	July 1991	Produce posters and bin labels for pilot outreach program.
7	August 1991	Develop source reduction and recycling presentations for schools.
8	August 1991	Produce lists of curricula and videos available to teachers.
9	August 1991	Develop and place first recycling and source reduction flyer for schools.
10	Ongoing	Provide for recycling and source reduction presentations in schools.
11	September 1991	Oversee placement of bins, posters and flyers in schools.
12	September 1991	Hold a press conference announcing the program.
13	November 1991	Develop and place second recycling and source reduction flyer.
14	January 1992	Organize a task force meeting to evaluate the program.
15	January 1992	Develop and place third recycling and source reduction flyer.
16	February 1992	Determine schools to be added to outreach program in '92/93 school yr.
17	March 1992	Develop and place fourth recycling and source reduction flyer.
18	April 1992	Identify recycling coordinators for additional schools.
19	May 1992	Develop and place fifth recycling and source reduction flyer.
20	June 1995	Determine effectiveness of program. Chart course for the next 5 years.

The above set of short-term tasks will be repeated each school year as more schools join the program. All County schools interested in participating in the program will be included by 1995.

SCHOOL EDUCATION AND OUTREACH CAMPAIGN
Medium-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	Ongoing	Produce educational flyers and other information material for schools.
2	Ongoing	Provide for source reduction and recycling presentations in schools.
3	Ongoing	Maintain curricula and video library for teachers.

Costs: Costs for implementation of the school education and outreach program are summarized in Table 7.4(b), located at the end of Section 7.4 of this component.

7.11.3 BUSINESS AND INSTITUTIONAL EDUCATION

The program will be implemented by the County of Santa Barbara Public Information Specialist. City staff will work with the County, as specified in Section 7.4.3 (under Suggested City Support).

An awards program has been selected as a way to increase awareness of source reduction activities in the unincorporated areas of the county, and to provide an incentive for individuals and businesses to become involved. Such an awards program will be publicized in the media and members of the general public, schools, and the commercial/industrial sector can apply by providing information on their source reduction activities. In this way, residents and businesses can be rewarded for their source reduction efforts, awareness of source reduction can be increased, and quantifiable data on source reduction activities can be gathered and counted toward the AB 939 mandates. The awards will be coordinated through the Countywide education and public information campaign led by County staff.

Newspaper ads will be run following airing of the television commercial in late 1991 to establish the slogan and concept in the business and institutional promotion. Direct mail appeals and newspaper coupons will be used as appropriate to reach various targeted audiences. Brochures will be developed prior to the scheduling of after-work open houses with each sector addressed by the end of the third year of the term. Press conferences and press releases will be used to bring attention to the open houses. The business and institutional task force will be established through contacts made at the open houses and through other means. The task force will meet on a regular basis determining the best means of awarding outstanding recyclers, source reducers and composters in the business and institutional areas. The task force also will be consulted in the development of plans to assist businesses catering to the Spanish-speaking market.

Schedule of Tasks

BUSINESS AND INSTITUTIONAL EDUCATION CAMPAIGN

Short-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	October 1991	Develop brochures for the target groups.
2	October 1991	Develop and place first newspaper ad(s) to follow television commercial.
3	October 1991	Develop a plan to reach Spanish-speaking market.
4	December 1991	Develop radio spots.
5	December 1991	Develop promotional plan for increasing County in-house recycling, source reduction and composting.
6	Ongoing	Place newspaper ads as appropriate.
7	Ongoing	Place radio spots as appropriate.
8	March 1992	Organize and hold first open house in the South County.
9	March 1992	Begin organizing a business recycling task force.
10	June 1992	Organize and hold second open house in the South County.
11	July 1992	Hold first task force meeting.
12	July 1992	Organize and hold the first open house in the North County.
13	September 1992	Hold second task force meeting, including North County businesses.
14	November 1992	Give public awards for business and institutional excellence in recycling, source reduction and composting.

BUSINESS AND INSTITUTIONAL EDUCATION CAMPAIGN

Medium-Term Implementation Schedule

The program will be broadened and expanded, considering diversion goals, past successes and failings.

Costs: Costs for implementation of the business and institutional education program are summarized in Table 7.4(c), located at the end of Section 7.4 of this component.

7.11.4 CONSUMER EDUCATION

The program will be implemented by the County of Santa Barbara Public Information Specialist. City staff will work with the County, as specified in Section 7.4.4 (under Suggested City Support).

Schedule for Tasks

CONSUMER EDUCATION CAMPAIGN Short-Term Implementation Schedule

TASK	DATE	DESCRIPTION
1	August 1991 - Ongoing	Placement of source reduction ads in County newspapers using the general campaign's slogan and concept.
2	January 1992	Develop an in-store promotion campaign to increase awareness of source reduction among consumers.
3	Feb. 1992 - Ongoing	Develop radio ads.
4	Feb. 1992 - Ongoing	Arrange for sponsorship of programs in exchange for ongoing promotion of source reduction methods.

CONSUMER EDUCATION CAMPAIGN Medium-Term Implementation

The program will be broadened and expanded, considering diversion goals, past successes and failings.

Costs: Costs for implementation of the business and institutional education program are summarized in Table 7.4(d), located at the end of Section 7.4 of this component.

7.12 MONITORING AND EVALUATION

This section identifies the methods by which the education and public information programs will be monitored, presents the criteria that will be used to evaluate the programs, and identifies the responsible agencies, funding requirements, contingency measures, and the monitoring and evaluation schedule.

7.12.1 GENERAL PUBLIC INFORMATION

Methods: A telephone number will be placed at the end of the 30-second television commercial, as well as other promotional material, to provide viewers with the opportunity to call the County's recycling hotline for information on how to recycle. Newspaper ads will include coupons that may be redeemed at various County-based recycling centers to boost recycling levels of certain commodities and determine the effectiveness of the ads. A telephone survey will be used to determine the impact that the general campaign has had on the public and to gauge the effectiveness of various approaches.

The level of response to the various advertising elements will be gauged through calls to the recycling line. A "baseline" of recycling levels at recycling centers in both the North and South County will be determined prior to launching the campaign. Levels of recycling will be measured every six months following the inception of the general campaign.

The telephone survey will be used to set baseline data for the level of source reduction and recycling, the commodities recycled and the locations and methods of recyclers (i.e., recycling at curbside, at the office, at school) to determine the number of people who began recycling in response to the general campaign and also the number of people who increased their recycling levels and source reduction methods in response to the campaign.

Criteria: The following criteria will be used to evaluate the education and public information programs:

1. the level of participation in the SRRE programs,
2. the level of community (residents and businesses) awareness of the SRRE programs, and
3. the cost effectiveness of the education and public information programs.

Responsible Agencies: The County of Santa Barbara will work with the CEC Recycling Center manager in Santa Barbara and the Vocational Training Center (recycling center) manager in Santa Maria to set baseline data and determine levels of increase following newspaper and television advertising. A marketing firm will be subcontracted to conduct the telephone survey.

Funding Requirements: Funding requirements for monitoring and evaluation of the general public information program are summarized in Table 7.4(e), located at the end of Section 7.4 of this component.

Contingency Measures: Should the previously cited monitoring efforts show a shortfall in the attainment of the solid waste diversion objectives, results from the telephone surveys will be used to determine the best way to redirect the general campaign.

Monitoring and Evaluation Schedule: The monitoring of response to the public information campaign will be accomplished by a regularly scheduled six-month review of telephone hotline inquiries, general recycling levels at CEC recycling centers and North County recycling centers, and participation rates of specific programs.

Review and evaluation of newspaper coupons and direct mail appeals will be made within a month of production (production schedule to be decided as appropriate during the campaign).

Six months following the baseline telephone survey, a follow-up survey (contacting different households in the same socioeconomic areas) will be conducted. Surveys will be held every six to twelve months to track the effectiveness of the general campaign and consumer education efforts.

All monitoring and evaluation data will be detailed as part of the annual report on the SRRE programs which will be submitted to the Board of Supervisors and the CIWMB.

7.12.2 SCHOOL EDUCATION AND OUTREACH

Methods: Students will be given pre-program and post-program quizzes about recycling and source reduction to determine their level of awareness. Records of each school's recycling levels will be obtained from CEC prior to inception of the pilot program. After a period of operation, records will again be analyzed to determine the level of increase in recycling rates.

Criteria: The following criteria will be used to evaluate the school education and outreach programs:

1. the level of participation in the school education and outreach program;
2. the level of community (residents and businesses) awareness of the school education and outreach program, and
3. the cost effectiveness of the school education and outreach program.

Responsible Agencies: The County of Santa Barbara will be responsible for establishing monitoring methods and will enlist the help of CEC recycling staff to obtain records of school recycling levels. The County PIO will enlist the help of the school recycling coordinators to administer the pre-program and post-program quizzes to a sampling of classrooms in each school.

Funding Requirements: Funding requirements for monitoring and evaluation of the school education and outreach program are summarized in Table 7.4(f), located at the end of Section 7.4 of this component.

Contingency Measures: Should the program not yield the expected results as determined in the written criteria, teachers and school administrators will be consulted as to how recycling levels and awareness can be increased at the school. Following an analysis of their recommendations, County staff will either outline an intensified program for the schools, or determine another course of action, as appropriate.

Monitoring and Evaluation Schedule: Pre-program quizzes will be given at the inception of the office paper and educational outreach program at each participating school. Post-program quizzes will be given after six months, or at the end of the school year, whichever comes first. A baseline of recycling levels will be determined prior to the inception of the outreach program and recycling levels will be monitored six months later (or at the end of the school year) to determine the level of increase in recycling in the schools and individual levels of commodities recycled.

All monitoring and evaluation data will be detailed as part of the annual report on the SRRE programs which will be submitted to the Board of Supervisors and the CIWMB.

7.12.3 BUSINESS AND INSTITUTIONAL EDUCATION

Methods: A baseline of recycling levels among businesses and institutions in the County will be determined prior to inception of the program and levels will be monitored at regular intervals to determine success of promotional efforts. The names of people attending open houses will be gathered into a mailing list and follow-up surveys will be conducted to determine the number of commodities being recycled and levels of recycling among businesses and institutions.

Criteria: Success of the program will be determined by the number of new businesses that establish recycling programs, the addition of commodities recycled in existing programs, and overall recycling levels.

Responsible Agencies: The County of Santa Barbara Public Works Department, Solid Waste Management Division, Public Information Specialist will be responsible for monitoring the program.

Funding Requirements: Funding requirements for monitoring and evaluation of the business and institutional education program are summarized in Table 7.4(g), located at the end of Section 7.4 of this component.

Contingency Measures: Should the program not reach targeted levels, a telephone survey will be conducted through a local advertising firm to determine the best way of restructuring the promotional effort. Baseline data will be gathered prior to the promotion and recycling levels will be monitored every six months. A newspaper ad and raffle promotion will be held prior to the open houses, as a means of advertising them. The survey will be conducted six months after the open houses and follow-up surveys of businesses recycling will be conducted as needed to determine if businesses are adding to the number of commodities they recycle and if they are aware of source reduction measures.

Monitoring and Evaluation Schedule: The monitoring of response to the business and institutional education campaign will be accomplished by a regularly scheduled six-month review of telephone hotline inquiries and general recycling levels of commercial recycling programs. Six months following the baseline telephone survey, a follow-up survey of businesses and institutions will be conducted. Surveys will be held every six to twelve months to track the effectiveness of the business and institutional education efforts.

All monitoring and evaluation data will be detailed as part of the annual report on the SRRE programs which will be submitted to the Board of Supervisors and the CIWMB.

7.12.4 CONSUMER EDUCATION

Methods: A telephone survey will be conducted to establish a baseline of awareness of source reduction and recycling methods and follow-up surveys will be conducted to determine the effectiveness of promotional activities among consumers. Newspaper ads will be developed that include coupons that can be redeemed through the County for a source reduction brochure.

Criteria: The telephone surveys will determine the level of increase in recycling and source reduction practices among County residents and the effectiveness of the consumer education campaign.

Responsible Agencies: The County of Santa Barbara Public Works Department Solid Waste Management Division Public Information Specialist will be responsible for monitoring the success of this program.

Funding Requirements: Funding requirements for monitoring and evaluation of the consumer education program are summarized in Table 7.4(h), located at the end of Section 7.4 of this component.

Contingency Measures: The telephone campaign will be used to determine the effectiveness of promotional activities. Should the program not reach its component objectives, additional survey questions will be developed to determine the best way of reaching and educating County residents.

Monitoring and Evaluation Schedule: The telephone survey will be conducted prior to the placement of any media to establish a baseline level of awareness. Follow-up surveys will be conducted every six months to track the growing level of awareness and determine the promotion effectiveness.

All monitoring and evaluation data will be detailed as part of the annual report on the SRRE programs which will be submitted to the Board of Supervisors and the CIWMB.

7.13 FUNDING FOR COUNTYWIDE CAMPAIGN

Funding for the implementation and monitoring and evaluation of the County's Education and Public Information Campaign comes from the County of Santa Barbara Solid Waste Enterprise Fund. Monies are generated through user based rates, revenue from recovered materials, state grant and financial incentives, commercial bank loans or lines of credit, and inter-jurisdictional funding. Contingency funding may include development impact fees and advanced disposal fees.

Funds contributed by the incorporated cities to benefit from the Countywide Campaign, and work in conjunction with County staff, will be placed in the Enterprise Fund. Tables 7.4(a) through 7.4(h) provide estimates of the funds the incorporated cities would contribute to the Fund for the County to head the implementation and monitoring and evaluation of the education and public information programs.

CHAPTER 8

DISPOSAL FACILITY CAPACITY COMPONENT

This component describes existing permitted solid waste landfills and projected needs for solid waste disposal in the City of Santa Maria.

8.1 Existing Facilities

The City disposes its waste in its own landfill located in Santa Maria, California. The owner and operator of the Santa Maria Landfill is the City of Santa Maria. The quantity and types of waste disposed at the facility is shown in Table 8.1.

Table 8.1 Annual Tons of Waste Disposed by Santa Maria at Santa Maria Landfill	
Generation Source	Tonnage
Residential	36,086
Commercial	67,662
Industrial	46,791
TOTAL	150,359

A detailed description of the City's waste types is provided in the Solid Waste Generation Analysis.

The permitted site acreage at the Santa Maria Landfill is 290 acres. Under the terms and conditions of the current Solid Waste Facilities Permit, the permitted capacity is 767 cubic yards per day. This is based on an average compaction rate of 1200 pounds per cubic yard and an average 460 tons per day of wastes disposed.

Current disposal fees, as of July 1, 1991, are \$4.05 for cars and sedans, \$7.35 for station wagons, pick-up trucks and trailers, \$29.35 per ton for refuse, \$44.45 for hard-to-handle materials, and \$191.20 per ton or \$2.35 each for disposal of tires.

The remaining facility capacity for the Santa Maria Landfill is 15,485,000 cubic yards with an estimated closure date of 2001.

8.2 15-Year Disposal Facility Requirements

As specified in CCR Section 18744, the disposal capacity needs projection for the 15-year period is calculated using the equation as required in the State regulations. Table 8.2 provides the projections for the City.

Table 8.2
City of Santa Maria
Waste Disposal Projections

Year	Projected Disposal (Tons)	Projected Disposal (Cubic Yards)
1991	153,630	256,050
1992	157,210	262,017
1993	160,870	268,117
1994	164,610	274,350
1995	136,103	226,838
1996	139,283	232,138
1997	142,530	237,550
1998	145,868	243,113
1999	149,280	248,800
2000	101,850	169,750
2001	104,250	173,750
2002	106,700	177,833
2003	109,210	182,017
2004	111,775	186,292
2005	114,565	190,942
Total	1,824,812	3,329,566

8.3 Facility Changes

8.3.1 Facility Phase-out or Closure

Currently, there are no plans to phase out or close the facility prior to the projected closure date.

8.3.2 New and Expanded Facilities.

There are no plans for expansion of the Santa Maria Landfill at this time.

8.3.3 Waste Exportation

The City of Santa Maria currently has no plans to dispose of its waste in any other landfill.

8.4 Conclusions

The projected disposal needs of the City of Santa Maria for the 15-year time frame is 3,329,566 cubic yards, while the remaining landfill capacity is 15,485,000 cubic yards; consequently, the Santa Maria Landfill will meet the projected disposal needs of the City of Santa Maria with no additional capacity needed.

CHAPTER 9

FUNDING COMPONENT

Introduction

This component provides cost estimates for implementation of programs during the short-term planning period; identifies sufficient funding and allocation of resources for program planning, development, and implementation; and identifies sources of contingency funding for program implementation.

Statements of objectives are presented to guide the future implementation of funding mechanisms and rate structures. Following this, an outline is provided of anticipated costs to implement the various programs within individual components.

The component contains cost estimates for implementation of Santa Maria's source reduction, recycling, composting, special waste and education and public information programs and facilities. In accordance with state regulations, these costs are referenced by calendar year. Following the section on cost estimates, funding sources are identified, as well as sources of contingency funding, that may be used if other sources are insufficient for program implementation.

The City currently uses system financing derived from four revenue sources to support Santa Maria's waste management program. The City receives funding from franchise fees, tipping fees at the Santa Maria Landfill, rental income on an unused portion of the landfill, and refuse collection fees. These funding sources are discussed under 9.3. The City of Santa Maria is participating with the County of Santa Barbara in the development and funding of several SRRE programs, and where applicable, the City's estimated shared costs are provided.

The SRRE includes a number of programs for which the County is responsible or assuming a lead role. Historically, the County of Santa Barbara has used system financing to fund solid waste activities in the unincorporated areas of the county. The Solid Waste Enterprise Fund (maintained by the County of Santa Barbara Public Works Department) collects revenues from user based rates, the sale of recovered materials, and state grants and financial incentives. However, specific project financing, in conjunction with system financing, is being recommended to finance the proposed major facilities discussed in the County's SRRE.

9.1 Funding Component Objectives

Although not specifically required by regulation, the following objectives are included in this component to guide the future development of program implementation funding mechanisms.

- To establish funding mechanisms sufficient for program implementation.
- To use funding mechanisms that promote resource recovery activities such as source reduction, recycling, and composting.
- To use funding mechanisms to encourage and promote the development of local activities and industries that contribute to the attainment of the County's diversion targets.

9.2 SRRE Implementation Costs

This section summarizes program implementation cost estimates developed for planning and development and the source reduction, recycling, composting, special waste, and education and public information components of the Source Reduction and Recycling Element (SRRE). It should be noted that these are planning level estimates based on a number of broad assumptions. Actual program implementation costs may vary depending on individual requirements of specific program design, siting considerations, financing mechanism and engineering design. When programs are scheduled to begin after 1991, the column has been marked not applicable with "n/a".

9.2.1 Planning and Development Costs

To effectively manage implementation of all SRRE component programs, and planning and development of the SRRE, the City will utilize the full-time staff position of Resource Conservation Coordinator, in the Solid Waste Division, Public Works Department. The cost associated with funding this position is approximately \$40,000. The amount of staff time is allocated among management of all SRRE programs, as delineated wherever feasible within each component. In addition, technical assistance will be required for annual planning and development activities related to the SRRE.

Table 9.1 summarizes the planning and development costs for the short-term planning period.

Table 9.1 SRRE Planning and Development Costs for the City of Santa Maria					
	1991	1992	1993	1994	1995
Resource Conservation Coord.	40,000	42,000	44,100	46,305	48,620
Technical Assistance	5,000	5,250	5,512	5,788	6,077
Total	45,000	47,250	44,651	52,093	54,697

9.2.2 Source Reduction Implementation Costs

The Source Reduction Component recommends implementation of the following programs:

- Promote backyard composting program to increase on-site management of residential food and yard wastes.
- Adopt a City procurement policy to encourage increased purchase of products with source reduction attributes.
- Develop and disseminate source reduction education, as part of the campaign discussed in detail in the Education and Public Information Component.
- Establish an awards campaign to recognize significant local reduction achievements.
- Provide technical assistance to the commercial and industrial sector.
- Study the feasibility of establishing variable can rate.
- Study the feasibility of reducing or waiving business licenses fees for "source reduction" businesses.
- Study the feasibility of establishing a pilot drop-off area for recoverable items at the Santa Maria Landfill.

Table 9.2 summarizes the estimated costs for implementation of these source reduction programs in the short-term planning period.

Table 9.2 Costs for Source Reduction Programs for the City of Santa Maria					
Programs	1991	1992	1993	1994	1995
Backyard composting*	n/a	2,000	2,100	2,205	2,315
Procurement policy	n/a	2,000	2,100	2,205	2,315
Public education**	n/a	2,000	2,100	2,205	2,315
Awards Program	***	***	***	***	***
Technical assistance**	n/a	2,000	2,100	2,205	2,315
Variable can rate	n/a	18,866	2,100	2,205	2,315
Pilot Drop-Off	n/a	2,000	2,100	2,205	2,315
Business license fees	n/a	2,000	2,100	2,205	2,315
Approximate subtotal	n/a	30,866	14,700	15,435	16,205
Contingency (10%)		3,087	1,470	1,544	1,621
Total	n/a	33,953	16,170	16,979	17,826
* Additional costs of \$13,500 may be incurred in 1992 should the City purchase bins for the anticipated 450 participants ** Costs presented here are for City coordination and technical assistance beyond the County program; see the Education and Public Information Component for costs as part of the Countywide program *** Costs are included in the Education and Public Information Component as part of the Countywide program					

9.2.3 Recycling Implementation Costs

The Recycling Component establishes the following new and/or expanded programs for collection:

- Continue and expand existing buyback and curbside recycling programs.
- Expand commercial and industrial source separated collection.
- Implement a mulching program for yard and wood wastes at the Santa Maria Landfill.
- Participate in scoping and developing a mixed waste processing facility serving Santa Maria, Solvang, Guadalupe and the surrounding unincorporated areas.
- Participate in local and regional recyclable materials market development activities.

Table 9.3 summarizes the estimated costs for development, implementation and monitoring of these recycling programs during the short-term planning period.

Table 9.3 Costs for Recycling Programs for the City of Santa Maria					
Program	1991	1992	1993	1994	1995
Curbside recycling*	252,500	265,125	278,381	292,300	306,915
Multi-family recycling**	n/a	90,000	94,500	99,225	104,186
Commercial program*	n/a	100,000	105,000	110,250	115,763
Yard/wood mulching*	n/a	61,000	64,050	67,253	70,615
Approximate subtotal	252,500	516,125	541,931	569,028	597,479
Contingency (10%)	2,525	51,613	54,193	56,903	59,748
Total	255,025	567,738	596,124	625,931	657,227
* Costs reflect mid-point of estimated range					
** Estimated costs based on pilot programs in Carpinteria and Santa Barbara					

The Recycling Component establishes the following new and/or expanded facilities for processing:

- Participate with the County of Santa Barbara and Cities of Guadalupe and Solvang in the planning and development of a regional processing facility. The facility could be an Integrated Diversion Facility serving the Santa Maria watershed providing both mixed waste processing and composting capabilities.

Table 9.4 summarizes the City's anticipated portion of costs for the development, implementation and monitoring of this recycling facility. Costs incurred in 1992 represent permitting, environmental review and documentation. Costs incurred in 1993 are for permitting/EIR, capital equipment, construction and operation and maintenance. Costs for 1994 and 1995 represent equipment, construction and operation and maintenance. The City's costs are based on a per capita proportionate share of total facility costs. (Total costs for the facility are provided at the bottom of the table.)

Building costs for the mixed waste processing facility are amortized over 50 years with an annual interest rate of 2 percent. Equipment costs for the facilities are amortized over 7 years with an annual interest rate of 15 percent. Annual operating and maintenance costs are increased by 5 percent annually.

Table 9.4 Costs for City of Santa Maria for Development and Implementation of Mixed Materials Processing Facility					
Program	1991	1992	1993	1994	1995
Mixed Materials Processing Facility	n/a	73,593	301,102	2,862,579	2,890,225
Approximate subtotal	n/a	7,359	30,110	286,258	289,023
Contingency (10%)					
Total	n/a	80,952	331,212	3,148,837	3,179,248
Total Costs for Facility (see County SRRE for detail)	n/a	150,000	6,123,571	5,820,585	5,876,975

9.2.4 Composting Implementation Costs

The Composting Component establishes the following programs:

- Participate with the City of Solvang, the City of Guadalupe and County of Santa Barbara in planning a regional composting facility to be operational in the medium-term. The facility may be developed as a future phase of the mixed materials processing facility selected for implementation in the Recycling Component.
- Participate with other jurisdictions in the development of a drop-off site at the Santa Maria Landfill for yard and wood wastes to be operational in the medium-term.
- Adopt fee incentives to encourage commercial, agricultural and residential generators from participating jurisdictions to bring clean loads of yard, agricultural and wood waste to the Santa Maria drop-off site.
- Conduct local compost product market development emphasizing landscape and agricultural uses of the municipally produced compost materials.
- Establish a curbside yard waste collection program for single-family homes in Santa Maria in the medium-term.

Costs for participation in a regional composting facility are a function of a number of variables, detailed in the Composting Component, such as whether the facility is developed as part of an Integrated Diversion Facility, site selection, facility specifications etc. Costs will be incurred primarily during the medium-term planning period, and as such, are not included here for short-term estimates. Refer to the Composting Component for estimated ranges of anticipated costs associated with development of facility.

The County is budgeting a first year cost of \$16,500 for the compost market development program; the City expects any financial participation needed to be funded through its SRRE planning and development budget.

Costs related to yard and wood waste processing at the Santa Maria Landfill have been estimated in the Composting Component, but are subject to several variables to be worked out in the medium-term.

Finally, curbside yard waste collection will be developed in the medium-term. The Composting Component discusses estimated costs based on different approaches to the program. Refer to the Composting Component for additional information regarding implementation costs of Santa Maria's composting programs.

9.2.5 Special Waste Implementation Costs

As described in the component, existing methods of special waste management are adequate to meet the needs of the City and County and comply with applicable regulations. Therefore, no new programs will be selected and implemented.

9.2.6 Education and Public Information Costs

The education and public information component establishes a broad-based Countywide program to support the source reduction, recycling and composting programs of all jurisdictions. Proportionate shared costs have been established on a per capital basis for each participating jurisdiction. Table 9.5 outlines Santa Maria's share of costs associated with development,

implementation and monitoring of education and public information programs. See the Education and Public Information Component for total costs of the countywide programs.

Table 9.5 Costs for Education and Public Information Programs for the City of Santa Maria					
Programs	1991	1992	1993	1994	1995
General public information	11,385	11,955	12,550	13,175	13,835
School education & outreach	2,545	6,675*	2,805	2,950	3,100
Business/industrial education	4,630	4,865	5,105	5,360	5,630
Consumer education	4,630	4,865	5,105	5,360	5,630
Approximate subtotal	23,190	28,360	25,565	26,845	28,195
Contingency (10%)	2,319	2,836	2,557	2,685	2,820
Total	25,509	31,196	28,122	29,530	31,015
* Includes bin capitalization costs					

9.2.7 Total Implementation Costs

The total estimated cost of implementing SRRE programs in the short-term is shown on Table 9.6. Anticipated revenues from materials recovered through program implementation have been incorporated in the costs estimates. No revenue escalation factor was used due to the great uncertainty surrounding secondary materials markets in the future. For simplicity, it is assumed that any decrease in material values will be off-set by increased diversion quantities. No revenues have been included from the yard waste composting program. The savings due to avoided disposal costs have not been included. Furthermore, potential environmental benefits have not been quantified and/or included. Costs are planning-level estimates only, and will vary depending on financing mechanism and specific program design.

Table 9.6 summarizes the anticipated costs for implementation of all component programs planned for the short-term in Santa Maria's SRRE, for which the City is responsible for funding, as presented individually above.

Table 9.6 Summary of Source Reduction and Recycling Element Program Costs for the City of Santa Maria					
Programs	1991	1992	1993	1994	1995
Planning and Development	45,000	47,250	44,651	52,093	54,697
Source Reduction	n/a	33,953	16,170	16,979	17,826
Recycling Programs	255,025	567,738	596,124	625,931	657,227
Recycling Facility	n/a	80,952	331,212	3,148,873	3,179,248
Composting	*	*	*	*	*
Education and Public Information	25,508	31,196	28,122	29,530	31,015
Total	325,533	761,089	1,016,279	3,873,406	3,940,013
* Costs for Composting Programs are incurred in the medium-term.					

9.3 Revenue Sources To Support Component Programs

This section identifies revenue sources which are planned to be used to fund program implementation. As the previous section demonstrates, the shift from the present waste management to an integrated system requires a significant capital investment and expenditure of public funds. To pay for this investment, rates for waste management services will likely increase proportionately (an increase for FY90-91 went into effect on July 1, 1991). In general, the current revenue-neutral, fee-for-service funding system in which users pay for all waste management activities will continue.

As mentioned in the Introduction to this chapter, the City currently receives revenue from four sources which support waste management services through the City's Waste Management Enterprise Fund:

- Santa Maria receives a franchise fee of 2% from Health Sanitation Services, which provides refuse collection for approximately 15% of the City, as well as from roll-off companies. In FY90-91, the City received a total of \$18,701.65 from franchise fees.
- The City received \$2,885,313.37 from tipping fees collected at the landfill in FY90-91.
- Revenue derived from refuse collection charges yielded \$1,460,105.55 from the residential sector and \$956,757.05 from the commercial sector in FY90-91.
- The City received \$28,838.70 in rental income from an unused portion of the landfill presently being used for agricultural purposes.
- The City received \$54,516.34 in miscellaneous interest income associated with waste management funds.

The following discussion outlines potential funding mechanisms the City may use to finance solid waste management activities. A combination of collection fees, tipping fees and franchise fee revenue, as well as creative financing methods, will be required by the City to support SRRE program planning and implementation.

9.3.1 User Based Rates

The following types of rate structures could generate funding:

- a. fees associated with the collection of waste generated by residential units;
- b. fees associated with the collection of commercially generated waste; and
- c. tipping fees collected at solid waste facilities (landfills, transfer stations and integrated diversion facilities).

Along with an overall increase in these rate structures, it is anticipated that adjustments will be made to establish economic incentives to use recycling programs and facilities, to alter collection routes in order to increase materials recovery rates, and to encourage source reduction activities.

9.3.2 Revenue from Recovered Materials

Material revenues can be a major source of operational revenue, although market factors can introduce instability. Various marketing arrangements can be made to reduce market instability. An example of this is Santa Barbara County's curbside recycling programs which maintain risk-sharing arrangements with private contractors (i.e., sharing the revenues--or losses--in sales of materials).

9.3.3 State Grants and Financial Incentives

Although major State funding to local government is being considered in California, it will be subject to the unpredictable actions of the State legislature. Although programs managed by the Department of Conservation and California Integrated Waste Management Board provide funding to local governments, the flow of funds is unpredictable. For example, money from the state's beverage container "Redemption Fund" is subject almost annually to redirection or potential elimination by the legislature. It is important to recognize that this funding could vary significantly in the immediate future when most local governments will be implementing SRRE programs and looking to the State for financial assistance.

9.3.4 Commercial Bank Loans or Lines of Credit

Commercial bank loans and lines of credit can be used to finance capital expenditures such as equipment purchases. If necessary, these mechanisms will continue to be used. Interest charged will be slightly below or above the prime lending rate, depending on repayment schedules and other traditional lending variables.

9.3.5 Inter-jurisdictional Funding

In some cases, funding requirements may be met by joint financing with other local jurisdictions. Fees should be established to assure that each jurisdiction pays its "fair share" of capital and operating costs in proportion to the benefits received.

9.4 Other Revenue Sources and Contingency Funding

This section identifies additional potential revenue sources and contingency funding mechanisms that the City could use to fund its integrated waste management program.

9.4.1 Development Impact Fees

Development impact fees could be used to offset increased waste management costs resulting from large-scale new developments that will generate significant additional solid waste. To implement the fees, ordinances must be passed and zoning laws may have to be altered. This option is largely a function of the City's growth level and is a mechanism to assure that the costs associated with growth are borne by the developing area.

By way of illustration, it should be noted that the projected amount of growth for the South Coast communities is limited. Since development impact fees are dependant upon the amount of growth experienced by a community, this contingency revenue source has limited potential on the South Coast. Communities in the North County, however, continue to grow at a steady rate. Therefore, the implementation of development impact fees would provide significant revenues dependant on the growth rates experienced in those communities.

9.4.2 Advanced Disposal Fees

The State Legislature is presently considering the adoption of advanced disposal fees. These fees are levied on selected products to offset waste management costs and can be applied to on-time-only products, such as disposable diapers, or to more durable products such as tires. It is anticipated that these fees would be assessed on manufacturers and be reflected in prices charged at the point of purchase. It is hoped that if the State adopts such a fee system a considerable portion of these fees would be transferred to the local level to offset implementation costs for integrated waste management programs.

9.4.3 Contingency Funding

The City of Santa Maria is exploring revenue options in case existing sources become insufficient or unavailable including City Service Areas or Assessment Districts, Joint Powers Agreements, General Obligation Bonds, Revenue Bonds and other Special Fees.

CHAPTER 10

INTEGRATION COMPONENT

The Integration Component is the culmination of the program components in the City of Santa Maria's Source Reduction and Recycling Element (SRRE). The SRRE identifies the types and quantities of waste generated and disposed of in the City, evaluates and selects program alternatives to manage that waste, and estimates diversion rates associated with source reduction, recycling, composting and special waste activities. Additionally, the SRRE outlines the Education and Public Information program to be implemented by the City and identifies funding to support integrated waste management programs.

The Integration Component demonstrates that the proposed programs will achieve, in combination, the mandated 25 and 50 percent diversion rates by 1995 and the year 2000, respectively. Programs also must reflect the state adopted hierarchy of integrated waste management, as defined in the Public Resources Code, of source reduction, recycling and composting, and environmentally safe landfilling and transformation. Selected component programs are designed to work in concert to comply with the hierarchy while achieving the waste diversion requirements.

The following sections describe waste management practices, and explain how the City's integration of SRRE components maximize program options and jointly achieve the diversion mandates, and how component priorities were determined. Table 10.1, located at the end of the chapter, summarizes the percentage diversion contributed by all component programs by program option. Table 10.2, beginning on page 10-7, provides an implementation schedule for component programs and tasks in the short-term planning period.

10.1 Solid Waste Management Practices

Source Reduction

As noted in the Source Reduction Component, the City of Santa Maria considers source reduction a priority, not only as an AB 939 priority in the hierarchy, but because preventing waste at the point of generation makes better sense than having to manage it, preserves landfill space, saves energy and natural resources, and averts collection and disposal costs. The component recognizes that source reduction is one of the most difficult waste management programs to implement; source reduction is not easily quantified, source reduction is characterized by limited awareness and experience, and, as source reduction is tied to a nationwide marketplace, significant coordination is required between local, state and federal governments.

Cities, in general, lack control over much of the current evolution of the source reduction arena. Substantive information and adequate measurement guidelines and methodology continue to be developed about source reduction, and cities are just beginning to understand enough about source reduction activities to be in a position to effectively educate their residents, business and industries.

The City of Santa Maria is committed to enacting the most effective and comprehensive source reduction program feasible given the constraints just described. The fundamental approach being taken by the City rests on the cooperative involvement of residents and business. By offering incentives to targeted waste generators to reduce waste, the City will enlist the assistance and cooperation of residents and businesses, and avoid the kind of resistance and higher enforcement costs associated with mandated programs.

This effort will be supported by a major educational campaign, as outlined in the Education and Public Information Component, designed to heighten the awareness and participation of target groups. In their approach and substance, the City is applying waste management practices which promote integrated waste management beginning with active and aggressive source reduction efforts.

Recycling and Composting

The City is promoting waste management practices through recycling and composting, already in place and to be carried out in the Source Reduction and Recycling Element. The City of Santa Maria will be expanding existing recycling activities and introducing new recycling and composting programs. The City currently achieves 5.3% diversion from recycling, largely through its numerous buyback and certified redemption operations which collect glass, aluminum and plastic containers. As mentioned in the SRRE, the City of Santa Maria will be implementing a significant increase in recycling activities, as well as a major education and public outreach effort.

The City will be initiating and expanding curbside, multi-family and commercial collection service to increase recycling rates and participation in the community. As noted in the Recycling Component, the City is part of a multi-jurisdictional effort to develop regional processing capabilities which will support a higher level of recycling and composting involvement by residents and business.

While no existing composting activities take place in Santa Maria, the City has pilot-tested a wood and green waste chipping operation at the landfill and monitored the Mini-Compost Digester Project conducted by the Community Environmental Council. The City of Santa Maria recognizes the potential diversion that can be achieved through yard waste composting and will lead in the development of a yard waste composting facility designed to serve several jurisdictions in the area. The facility may be located at the Santa Maria Landfill.

The City has selected composting programs which encourage residential and commercial generators to segregate and drop-off compostable waste and participate in curbside collection of yard waste. These practices, combined with market development activities to secure end-uses for composted products, contribute to Santa Maria's goal of promoting composting as part of the City's integrated waste management program.

Environmentally Safe Transformation and Land Disposal

No transformation of waste takes place in the City of Santa Maria or County of Santa Barbara.

The City will continue to practice environmentally safe land disposal of those wastes which cannot be diverted through implementation of source reduction, recycling and composting programs. The facility used by the City is the Santa Maria Landfill. The City will continue to engage in practices associated with sanitary landfill design and operation including safety programs, load checks, landfill gas monitoring and control, groundwater monitoring and standard daily cover.

10.2 Integration of Program Components

The City of Santa Maria will be implementing the bulk of the available program options as part of its source reduction program. Several source reduction programs were not selected (loans/guarantees and grants, land-use development permits, required government or commercial reduction plans) on the basis of high administrative needs, minimal potential diversion, and anticipated program resistance. Source reduction program alternatives are expected to achieve established objectives, while diverting priority waste types targeted for source reduction programs - high grade and mixed paper, yard and food waste, plastics, textiles and white goods.

Program alternatives (study variable can rate, drop-off site for recoverables, consider reduced or waived business license fees, promote backyard composting, technical assistance, source reduction education, award program, City procurement policy) selected by the City of Santa Maria in the Source Reduction Component reflect the approach discussed above of “rewarding” source reduction and discouraging waste production. The selection of these programs is based upon local conditions, priority wastes, ease of implementation, and financial incentives. By targeting package design and production and consumer buying and using habits, these efforts are geared to make it cost-effective, convenient, appealing and visibly discernible for residents and businesses to reduce their own waste.

Although it is not feasible to estimate diversion from most of the source reduction programs, the City has elected to implement programs such as technical assistance, education, award program, backyard composting promotion and drop-off sites in order to increase community awareness of source reduction and increase both participation and reporting.

The SRRE Recycling Component clearly recognizes that the City of Santa Maria must implement a major increase in recycling programs between now and the year 2000 to reach the diversion mandates. In order to conduct an aggressive recycling effort, the City selected for implementation most program alternatives, with the exception of two options. Mobile recycling and salvage operations at the landfill were not selected due to limited costs/diversion benefits and current salvage activities taking place at the Santa Maria Landfill. The City’s recycling program will concentrate on expansion of curbside collection, expanded buyback programs, multi-family collection and expanded commercial recovery, mulching and mixed waste processing.

The City has selected for implementation composting programs (regional composting facility, drop-off site and incentive fees, and curbside yard waste collection) which facilitate meeting AB 939 diversion mandates, result in marketable end-use products, and target priority waste types. Composting programs were selected on the basis of effectiveness, cost, potential to build on existing infrastructure, convenience, safety and ease of implementation. Program alternatives which were not selected were less effective, sometimes at a higher costs, inconvenient, difficult to implement or enforce, or presented a higher potential of contamination.

The City of Santa Maria has selected program options within each component which, when combined, reflect an aggressive and integrated overall program toward waste reduction. The integrated waste management program developed by the City maximizes all feasible source reduction, recycling and composting component options while emphasizing efficiency and effectiveness. Programs have been designed to complement and reinforce each other, both within and between components.

The City recognizes the important role of comprehensive education, information dissemination and public outreach in changing waste disposal and generation patterns. The multi-targeted education program planned by the County of Santa Barbara with the participation of the City of Santa Maria will integrate SRRE program components in its comprehensive approach and exhaustive media strategy. Consumers, schools, government, business, commerce and industry will be informed and educated that all methods of waste reduction - source reduction, recycling and composting - are integral pieces of an integrated waste management system. The public will be saturated with information and materials about waste management programs, how to participate and change buying and using habits, practices for recycling or disposing of whatever waste is generated, etc.

10.3 Achievement of Diversion Mandates

As has been outlined in the program components (Source Reduction, Recycling, and Composting), the City of Santa Maria will achieve 32.4% diversion by 1995 and 58.7% diversion by the year 2000. The City has estimated anticipated diversion from planned program options for the source reduction, recycling and composting components.

Given the difficulty in measuring source reduction, diversion from only the backyard composting alternative has been estimated specifically. Recycling and composting divert specific materials which can be identified and quantified, whereas source reduction programs, such as education, business fee incentives and technical assistance, do not involve collection and processing of waste materials and, consequently, cannot be easily measured or used to develop any kind of a baseline from which to measure. The issue of which materials and activities constitute source reduction, and how they are measured, continues to be debated and refined.

The City has estimated diversion expected from backyard composting, which yields 882 tons in the full-scale operation of the program for a diversion of .4% of the City's total waste stream. The City anticipates that as methodology is developed, diversion resulting from many source reduction activities will be more easily quantified.

The City is relying largely on its implementation of recycling programs to carry the weight of meeting the diversion mandates. Implementing all feasible program options, and anticipating operation of a mixed materials processing facility, the City is expecting to achieve recycling rates of 29.4% and 30.7% in 1995 and the year 2000, respectively.

The City is anticipating a significant level of diversion through composting, especially with the development of a regional yard waste composting facility, possibly as part of an Integrated Diversion Facility. Composting programs will yield diversion of 23% in the year 2000.

In concert, the selected source reduction, recycling and composting programs will enable the City to meet the 25% diversion mandate set for 1995. As planned, the development of mixed waste processing is needed in order for Santa Maria to meet 50% diversion by the year 2000. The Cities of Santa Maria, Guadalupe and Solvang, along with the County of Santa Barbara, will cooperate under a joint agreement to design and operate the facility.

An Integrated Diversion Facility (IDF) may be designed to provide both mixed materials waste processing and composting capabilities. The City anticipates that the facility would accept commercial, industrial and residential source separated and mixed waste, and source separated and commingled recyclables, as well as source separated yard and food waste for composting.

Table 10.1 delineates the percentage of diversion contributed by all component programs by selected alternatives. The table illustrates how the Source Reduction and Recycling program components jointly achieve the AB 939 diversion mandates by 1995 and the year 2000.

Table 10.1 Diversion Summary for all SRRE Component Programs		
COMPONENT PROGRAM	1995	2000
SOURCE REDUCTION		
Existing Source Reduction	1.6%	1.6%
Backyard Composting	.4%	.4%
Other Programs	1.0%	3.0%
Program Total	3.0%	5.0%
RECYCLING		
Curbside Collection	2.2%	2.3%
Multi-Family Recycling	1.0%	1.0%
Buyback Centers	2.2%	2.4%
Comm./Ind. Source Separated Collection	9.0%	10.0%
Yard/Wood Mulching	2.0%	2.0%
Mixed Waste Processing	13.0%	13.0%
Program Total	29.4%	30.7%
COMPOSTING		
Yard Waste Drop-Offs	0.0%	5.0%
Curbside Yard Waste Collection	0.0%	6.0%
Mixed Organics Composting	0.0%	12.0%
Program Total	0.0%	23.0%
TOTAL DIVERSION	32.4%	58.7%

10.4 Determining Priorities Between Components

Priorities between components were determined on the basis of a number of factors listed below within the context of established goals and objectives, available resources and capabilities, and potential diversion of programs:

- The integrated waste management hierarchy as established in AB 939 which encourages planning and implementation of waste management programs in the following order: source reduction, recycling and composting, and environmentally safe transformation and landfilling;
- Local wastestream conditions and waste management needs;
- Existing waste management activities and programs;
- Analysis of waste priorities and program alternatives.

10.5 Integrated Implementation Schedule

Table 10-2, which follows this component, outlines a task implementation schedule for new and expanded SRRE component programs in the City of Santa Maria through the short-term planning period. The schedule includes a brief descriptive title for each task, specifies the responsible entity, and indicates task dates.

The Integration Component also is required to provide a schedule for funding source availability. The primary sources of funding for SRRE programs are tipping fees, refuse collection fees, franchise fee revenue and rental income from an unused portion of the landfill. These funding sources are generally available during the fiscal year. Revenue generated from the sale of recovered materials would be available on an annual basis. Capital and operating costs associated with the programs selected for implementation in subsequent fiscal years will be financed as necessary through rate increases. Detailed discussion of funding of SRRE programs is provided in the Funding Component.

10.6 Summary

The challenge of AB 939 for local government is to strike a balance between reaching a high level of source reduction diversion, the highest priority on the hierarchy, and implementing recycling and composting programs, which rank second on the hierarchy, but facilitate with greater ease and demonstrated success the achievement of the 25 and 50 percent diversion mandates. Working with this inherent conflict - where source reduction efforts are first on the hierarchy, but typically too difficult to quantify - cities and counties are struggling to develop Source Reduction and Recycling Elements which comply with both the spirit and letter of the law. The City of Santa Maria's SRRE plans and implements integrated waste management programs which satisfy AB 939 diversion mandates and hierarchy, addresses existing wastestream conditions and management needs, and engages the participation of city residents.

Table 10.2
City of Santa Maria
SRRE Program Implementation Schedule

PROGRAM/TASK	RESPONSIBLE AGENCY	SHORT TERM				
		1991	1992	1993	1994	1995
SOURCE REDUCTION						
A. <u>Variable Can Rate</u>						
1. Begin rate structure study	City Public Works		March			
2. If deemed appropriate, design rate fee schedule	City Public Works		June			
3. Present proposed schedule to City Council	City Public Works/City Council		August			
4. Produce and distribute notification materials	City Public Works		Sept			
5. Notify customers; program begins	City Public Works			January		
6. Evaluate effectiveness; revise as necessary	City Public Works			July		
7. Conduct annual monitoring and evaluation	City			Ongoing		
B. <u>Pilot Drop-Off for Recoverable Items</u>						
1. Evaluate landfill site	City Public Works		January			
2. If site is feasible, meet with charitable organizations	City Public Works		March			
3. If pilot is feasible, present proposal to City Council	City Public Works/City Council		June			
4. Begin pilot drop-off site	City Public Works		August			
C. <u>Reduced Business License Fees</u>						
1. Determine number of eligible businesses, potential revenue loss to City, cooperation expectations	CityFinance		March			
2. If deemed feasible, adopt fees and system for diversion quantification	CityFinance		August			
3. Conduct annual monitoring and evaluation	City		Ongoing			
D. <u>Backyard Composting</u>						
1. For pilot project participants: conduct workshops, respond to info. requests, mail follow-up surveys, prepare report	County	March-May				
2. Review report and refine program expansion plans	County/City	October				
3. Conduct direct mail campaign	County/City	Dec				
4. Purchase more bins and distribute to participants	County/City		January			
5. Conduct workshops for participants	County/City		March			

Milestone dates are indicated in bold

**Table 10.2 (cont.)
City of Santa Maria
SRRE Program Implementation Schedule**

PROGRAM/TASK	RESPONSIBLE AGENCY	SHORT TERM				
		1991	1992	1993	1994	1995
6. Mail follow-up survey, respond to information requests, estimate diversion	County/City		June			
7. Recruit remainder of City by direct mail; purchase additional bins	County/City		Sept			
8. Expand program to remainder of City	County/City			January		
9. Conduct annual monitoring and evaluation	County/City			Ongoing		
E. <u>Technical Assistance</u> Conducted by the County of Santa Barbara; refer to Education and Public Information Component of County SRRE	County/City	October--- (initial	----March tasks)			
F. <u>Source Reduction Education</u> Conducted by the County of Santa Barbara; refer to Education and Public Information Component of County SRRE	County/City	June----- (initial	--February tasks)			
G. <u>Awards Program</u> Conducted by the County of Santa Barbara; refer to Education and Public Information Component of County SRRE	County/City		Nov			
H. <u>Procurement Policy</u> 1. Evaluate existing and draft new policy (remove barriers, set goals, specifications, and price preferences) 2. Present proposed new policy to City Council for adoption 3. Conduct annual monitoring and evaluation	City Procurement Division City Procurement/City Council City Purchasing Division		January May Ongoing			
RECYCLING						
A. <u>Curbside Recycling</u> 1. Curbside collection begins pursuant to contract 2. Conduct annual monitoring and evaluation	City/Contractor City/Contractor	July Ongoing				

Table 10.2 (cont.)
City of Santa Maria
SRRE Program Implementation Schedule

PROGRAM/TASK	RESPONSIBLE AGENCY	SHORT TERM				
		1991	1992	1993	1994	1995
B. <u>Expanded Buyback</u> No specific implementation tasks are proposed as buyback facilities are privately operated independent of the City	Private/Non-profit sector					
C. <u>Commercial Source Separation</u>						
1. Evaluate results of existing and commercial pilot projects	City		January			
2. Design a commercial collection system and release RFPs if necessary	City		March			
3. Select private contractors for collection as necessary	City		June			
4. Implement expanded commercial recycling collection	City		Sept			
5. Conduct annual monitoring and evaluation	City		Ongoing			
D. <u>Mixed Waste Processing Facility</u>						
1. Participate in scoping configuration and capacity	County/Cities of Santa Maria,Guadalupe, Solvang		January			
2. Participants define facility and institutional arrangements	County/Cities of Santa Maria,Guadalupe, Solvang		June			
3. Prepare interjurisdictional agreement for facility development with the County and cities	County/Cities of Santa Maria,Guadalupe, Solvang		June			
4. Participate in preparation of RFPs or other facility procurement or design arrangements	County/Cities of Santa Maria,Guadalupe, Solvang		Sept			
5. Conduct CEQA determinations and begin siting and permitting process	County/Cities of Santa Maria,Guadalupe, Solvang			January		
6. Complete siting and permitting processes	County/Cities of Santa Maria,Guadalupe, Solvang				January	
7. Begin facility construction	County/Cities of Santa Maria,Guadalupe, Solvang				January	
8. Conduct facility performance testing	County/Cities of Santa Maria,Guadalupe, Solvang				June	
9. Begin full-scale operations	County/Cities of Santa Maria,Guadalupe, Solvang				Sept	
10. Conduct annual monitoring and evaluation	County/Cities of Santa Maria,Guadalupe, Solvang				Ongoing	

Milestone dates are indicated in bold

Table 10.2 (cont.)
City of Santa Maria
SRRE Program Implementation Schedule

PROGRAM/TASK	RESPONSIBLE AGENCY	SHORT TERM				
		1991	1992	1993	1994	1995
E. <u>Multi-Family Recycling</u>						
1. Evaluate data from pilot programs and RALCCO's services	City Public Works		January			
2. If necessary, determine and establish contract arrangement	City Public Works		March			
3. Budget for full-scale multi-family recycling programs	City Public Works		June			
4. Begin phasing-in full-scale collection service	City Public Works		Sept			
5. Conduct annual monitoring and evaluation	City Public Works		Ongoing			
F. <u>Yard and Wood Waste Mulching</u>						
1. Determine program configuration, market potential, permitting requirements and equipment needs	City Public Works		January			
2. Set up processing area at landfill as necessary	City Public Works		June			
3. Begin program	City Public Works		Sept			
4. Conduct annual monitoring and evaluation	City Public Works		Ongoing			
COMPOSTING						
A. <u>Yard Waste/Mixed Organics Composting</u> (schedule may represent expansion of mixed processing facility)						
1. City begins scoping configuration and capacity	City of Santa Maria/ Solvang/ Guadalupe/County/private				June	
2. With participating jurisdictions, prepare detailed description of proposed facility and institutional arrangements	City of Santa Maria/ Solvang/ Guadalupe/County/private				Sept	
3. Prepare and adopt agreement for development of facility	City of Santa Maria/ Solvang/ Guadalupe/County/private					January
4. Release RFPs, conduct A & E or other facility procurement process	City of Santa Maria/ Solvang/ Guadalupe/County/private					January
5. Conduct CEQA determinations and begin facility permitting process	City of Santa Maria/ Solvang/ Guadalupe/County/private					January
Additional implementation tasks conducted in medium-term; refer to Composting Component for schedule						
B. <u>Drop-Off Site at Santa Maria Landfill</u>						
Implementation of this program begins in the medium-term; refer to Composting Component for schedule						

Milestone dates are indicated in bold

Table 10.2 (cont.)
City of Santa Maria
SRRE Program Implementation Schedule

PROGRAM/TASK	RESPONSIBLE AGENCY	SHORT TERM				
		1991	1992	1993	1994	1995
C. <u>Curbside Yard Waste Collection</u>						
1. City evaluates institutional arrangements and curbside yard waste collection program design Additional implementation tasks conducted in medium-term; refer to Composting Component for schedule	City Public Works					January
D. <u>Fee Incentives at the Santa Maria Landfill</u>						
1. City evaluates existing disposal system to determine type of fee incentive to encourage segregation of yard waste by self-haulers	City Public Works		January			
2. City revises tipping fees to encourage use of drop-off site	City Public Works		Sept			
3. Conduct annual monitoring and evaluation	City Public Works		Ongoing			
SPECIAL WASTE						
A. <u>Tires</u>						
1. Continue current methods of handling tires through commercial operations	Private sector	Ongoing				
B. <u>Sewage Sludge</u>						
1. Continue current methods of handling properly treated sewage sludge	City	Ongoing				
2. Monitor technological developments in recycling, reducing and/or reuse	City/County	Ongoing				
3. Evaluate composting	City/County	Ongoing				
C. <u>Medical Waste</u>						
1. Continue current load check and medical waste treatment program prior to disposal	City/County	Ongoing				
2. Continue existing large quantity generator program	City/County	Ongoing				
3. Support County Small Quantity Generator Program	City	Ongoing				

Milestone dates are indicated in bold

APPENDIX: GLOSSARY

The following definitions contain those found in article 3, section 18720 of the California Integrated Waste Management Act of 1989 emergency regulations. In addition, other definitions have been added to clarify the conditions found in the County of Santa Barbara.

Agricultural wastes: the solid wastes of plant and animal origin, which result from the production and processing of farm or agricultural products, including manures, orchard and vineyard prunings, and crop residues, which are removed from the site of generation for solid waste management. Agricultural refers to SIC Codes 011 through 0291.

Aluminum can or aluminum container: any food or beverage container that is composed of at least 94 percent aluminum.

Asbestos: fibrous forms of various hydrated minerals, including chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite-grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.

Ash: the residue from the combustion of any solid or liquid material.

Authorized recycling agent: a person that a local governing body or private commercial entity authorizes or contracts with to collect its recyclable waste material. An authorized recycling agency may be a municipal collection service, private refuse hauler, private recycling enterprise, or private nonprofit corporation or association.

Bi-metal container: any metal container composed of at least two different types of metals, such as a steel container with an aluminum top.

Best readily available and applicable data or representative data: information that is available to a jurisdiction from published sources, field sampling, the Board, or other identifiable entities which is the most current data and which addresses the situation being examined.

Board: the California Integrated Waste Management Board.

Buyback recycling center: a facility which pays a fee for the delivery and transfer of ownership to the facility of source separated materials for the purpose of recycling or composting.

Capital costs: those direct costs incurred in order to acquire real property assets such as land, buildings and building additions, site improvements, machinery, and equipment.

Commercial solid wastes: solid waste originating from stores, business offices, and commercial warehouses; hospitals, educational, health care, military, and correctional institutions; non-profit research organizations; and government offices. Commercial solid waste refers to SIC Codes 401 through 439, 4961, and 4971 (transportation, communications and certain utilities), 501 through 5999 (wholesale and retail trade), 601 through 6799 (finance, insurance and real estate), 701 through 8748 (public and private service industries such as hospitals and hotels), and 911 through 9721 (public administration). Commercial solid wastes do not include construction and demolition waste.

Commercial unit: a site zoned for a commercial business and which generates commercial solid wastes.

Composition: a set of identified solid waste materials, categorized into waste categories and waste types pursuant to sections 18722(i) and (j) of Article 6.1, Chapter 9, Title 14.

Compost: the product resulting from the controlled biological decomposition of organic wastes that are source separated from the municipal solid waste stream, or which are separated at a centralized facility. Compost includes vegetable, yard and wood wastes which are not hazardous wastes.

Composting: a method of waste treatment which produces a product meeting the definition of compost.

Composting facility: a permitted solid waste facility at which composting is conducted and which produces a product meeting the definition of compost.

Construction and demolition waste: solid wastes, such as building materials, and packaging and rubble resulting from construction, remodeling, repair and demolition operations on pavements, houses, commercial buildings, and other structures. Construction refers to SIC Codes 152 through 1794, 1796, and 1799. Demolition refers to SIC Code 1795.

Corrugated container: a paperboard container fabricated from two layers of kraft linerboard sandwiched around a corrugating medium. Kraft linerboard means paperboard made from wood pulp produced by a modified sulfate pulping process, with basis weight ranging from 18 to 200 pounds, manufactured for use as facing material for corrugated or solid fiber containers. Linerboard also may mean that material which is made from reclaimed paper stock. Corrugating medium means paperboard made from chemical or semichemical wood pulps, straw or reclaimed paper stock, and folded to form permanent corrugations. Corrugated container refers to SIC Code 2653.

Cost-effective: a measurement of cost compared to an unvalued output (e.g., the cost per ton of solid waste collected) such that the lower the costs, the more cost-effective the action.

Countywide Integrated Waste Management Plan (CIWMP, Plan): the Countywide Integrated Waste Management Plan as defined in section 41750 of the Public Resources Code.

Designated recycling collection location: the place where an authorized recycling agent has contracted with either the local governing body or a private entity to pick up recyclable materials segregated from other waste material. Designated recycling collection location includes, but is not limited to, the curbside of a residential neighborhood or the service alley of a commercial enterprise.

Disposal: the management of solid waste through landfilling or transformation at permitted solid waste facilities.

Disposal capacity: the capacity, expressed in either weight in tons or its volumetric equivalent in cubic yards, which is either currently available at a permitted solid waste landfill, or will be needed for the disposal of solid waste generated within the jurisdiction over a specified period of time.

Disposal facility: any facility or location where disposal of solid waste occurs.

Disposal site: includes the place, location, tract of land, area, or premises in use, intended to be used, or which has been used for the landfill disposal of solid wastes. Disposal site includes solid waste landfills.

Disposal site owner: the person who holds title to the property used as a disposal site after January 1, 1977.

Diversion alternative: any activity, existing or occurring in the future, which has been, is, or will be implemented by a jurisdiction which could result in or promote the diversion of solid waste, through source reduction, recycling or composting from solid waste landfills and transformation facilities.

Drop-off recycling center: a facility which accepts delivery or transfer of ownership of source separated materials for the purpose of recycling or composting, without paying a fee. Donation of materials to collection organizations, such as charitable groups, is included in this definition.

Durability: the ability of a product to be used for its intended purpose for a period greater than the mean useful product life span of similar products.

End market or end use: the use or uses of a diverted material or product which has been returned to the economic mainstream, whether or not this return is through sale of the material or product. The material or product can have a value which is less than the solid waste disposal cost.

Enforcement program: the regulations and procedures adopted by the Board.

Feasible: that a specified program, method, or other activity can, on the basis of cost, technical requirements and time frame for accomplishment, be undertaken to achieve the objectives and tasks identified by a jurisdiction in a Countywide Integration Waste Management Plan.

Ferrous metals: any iron or steel scrap which has an iron content sufficient for magnetic separation.

Food waste: all animal and vegetable solid wastes generated by food facilities, as defined in California Health and Safety Code section 27521, or from residences, that result from the storage, preparation, cooking, or handling of food.

Hazard: having one or more of the characteristics that cause a substance or combination of substances to qualify as a hazardous material, as defined by section 66084 of Title 22 of the California Code of Regulations. Hazard includes any condition, practice, or procedure which is or may be dangerous, harmful, or perilous to employees, property, neighbors, or the general public.

Household hazardous waste: those wastes resulting from products purchased by the general public for household use which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial known or potential hazard to human health or the environment which improperly treated, disposed, or otherwise managed.

Household hazardous waste collection: a program activity in which household hazardous wastes are brought to a designated collection point where the household hazardous wastes are separated for temporary storage and ultimate recycling, treatment, or disposal.

Implementation: the accomplishment of the program tasks as identified in each component required by section 18733 of Article 6.1, Chapter 9, Title 14.

Industrial solid waste: solid waste originating from mechanized manufacturing facilities, factories, refineries, construction and demolition projects, and publicly operated treatment works, and/or solid wastes placed in debris boxes.

Industrial unit: a site zoned for an industrial business and which generated industrial solid wastes.

Inert solids or inert waste: a non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board pursuant to Division 7 (commencing with section 13000) of the California Water Code and does not contain significant quantities of decomposable solid waste.

Integrated diversion facility (IDF): a mixed materials processing facility developed in conjunction with a compost facility to remove the recyclable fraction of the wastestream (including organics and paper grades suitable for compost feedstock). Such a facility would process the residential, commercial, and industrial wastestreams and accept source separated and commingled recyclables for processing.

Intermediate processing centers (IPC): facilities that process both source separated and commingled materials collected in residential and commercial recycling programs. These facilities typically use both manual and mechanical methods for sorting materials and preparing them for market.

Jurisdiction: the city or county responsible for preparing any one or all of the following: the Countywide Integrated Waste Management Plan, the Countywide Siting Element, the Source Reduction and Recycling Element, or the Household Hazardous Waste Element.

Local governing body: the legislative body of the city, county, or special district which has authority to provide solid waste handling services.

Marine wastes: solid wastes generated from marine vessels and ocean work platforms, solid wastes washed onto ocean beaches, and litter discarded on ocean beaches.

Market development: a method of increasing the demand for recovered materials so that end markets for the materials are established, improved or stabilized and thereby become more reliable.

Materials recovery facility: a permitted solid waste facility where solid wastes or recyclable materials are sorted or separated, by hand or by use of machinery, for the purposes of recycling or composting.

Medium-term planning period: a period beginning in the year 1996 and ending in the year 2000.

Mixed paper: a waste type which is a mixture, unsegregated by color or quality, of at least two of the following paper wastes: newspaper, corrugated cardboard, office paper, computer paper, white paper, coated paper stock, or other paper wastes.

Mixed waste processing: facilities that receive solid waste for processing to remove the recyclable fraction from the wastestream. These facilities use both manual and mechanized means to segregate and process the incoming solid waste.

Model component format: that format described in sections 18733.1 through 18733.6 of Article 6.2, Chapter 9, Title 14, which shall be used for the preparation of several of the individual components of a SRRE.

Municipal solid waste (MSW): all solid wastes generated by residential, commercial, and industrial sources, and all solid waste generated at construction and demolition sites, at food-processing facilities, and at treatment works for water and waste water, which are collected and transported under the authorization of a jurisdiction or are self-hauled. Municipal solid waste does not include agricultural crop residues (SIC Codes 071 through 0724, 0751), animal manure (SIC Code 0751), mining waste and fuel extraction waste (SIC Codes 101 through 1499), forestry wastes (SIC Codes 081 through 0851, 2411 and 2421), and ash from industrial boilers, furnaces and incinerators.

Non-ferrous metals: any metal scraps that have value, and that are derived from metals other than iron and its alloys in steel, such as aluminum, copper, brass, bronze, lead, zinc and other metals, and to which a magnet will not adhere.

Non-recyclable paper: discarded paper which has no market value because of its physical or chemical or biological characteristics or properties.

Non-renewable resource: a resource which cannot be replenished, such as those resources derived from fossil fuels.

Normally disposed of: those waste categories and waste types which: 1) have been demonstrated by the Solid Waste Generation Study, conducted pursuant to section 18722 of Chapter 9, Title 14, to be in a solid waste stream attributed to the jurisdiction as of January 1, 1990; 2) which are deposited at permitted solid waste landfills or transformation facilities subsequent to any recycling or composting activities at those solid waste facilities; and 3) which are allowed to be considered in the establishment of the base amount of solid waste from which source reduction, recycling, and composting levels shall be calculated, pursuant to the limitations listing in Public Resources Code section 41781(b).

Old newspaper: any newsprint which is separated from other types of solid waste or collected separately from other types of solid waste and made available for reuse and which may be used as a raw material in the manufacture of a new paper product.

Operational costs: those direct costs incurred in maintaining the ongoing operation of a program or facility. Operational costs do not include capital costs.

Operator: the person to whom the approval to operate a disposal site, transfer or processing station, or collection system is granted.

Organic waste: solid wastes originated from living organisms and their metabolic waste products, and from petroleum, which contain naturally produced organic compounds, and which are biologically decomposable by microbial and fungal action into the constituent compounds of water, carbon dioxide, and other simpler organic compounds.

Other plastics: all waste plastics except polyethylene terephthalate (PET) containers, film plastics, and high density polyethylene (HDPE) containers.

Permitted capacity: that volume in cubic yards or weight in tons which a solid waste facility is allowed to receive, on a periodic basis, under the terms and conditions of that solid waste facility's current Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board.

Permitted landfill: a solid waste landfill for which there exists a current Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board, or permitted under the regulatory scheme of another state.

Permitted solid waste facility: a solid waste facility for which there exists a Solid Waste Facilities Permit issued by the local enforcement agency and concurred in by the California Integrated Waste Management Board or permitted under the regulatory scheme of another state.

Person: includes an individual, firm, association, copartnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

Processing: the reduction, separation, recovery, conversion, or recycling of solid waste.

Program: the full range of source reduction, recycling, composting, special waste, or household hazardous waste activities undertaken by or in the jurisdiction or relating to the management of the jurisdiction's waste stream to achieve the objectives identified in the Source Reduction, Recycling, Composting, and Special Waste components and the Household Hazardous Waste Element, respectively.

Purchase preference: a preference provided to a wholesale or retail commodity dealer which is based upon the percentage amount that the costs of products made from recycled materials may exceed that of similarly non-recycled products and still be deemed the lowest bid.

Rate structure: set of prices established by a jurisdiction, special district (as defined in Government Code section 56036), or other rate setting authority to compensate the jurisdiction, special district, or rate setting authority for the partial or full costs of the collection, processing, recycling, composting, and/or transformation or landfill disposal of solid wastes.

Recovered material: material which has been retrieved or diverted from disposal or transformation for the purpose of recycling, re-use or composting. Recovered material does not include those materials generated from and reused on site for manufacturing purposes.

Recycle/recycling: the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. Recycling does not include transformation.

Region: the combined geographic area of two or more incorporated areas; two or more unincorporated areas; or any combination of incorporated and unincorporated areas.

Regional water board: California regional water quality control board.

Repairability: the ability of a product or package to be restored to a working or usable state at a cost which is less than the replacement cost of the product or package.

Residential solid waste: solid waste originating from single-family or multiple family dwellings.

Residential unit: a site occupied by a building which is zoned for residential occupation and whose occupants generate residential solid wastes.

Reusability: the ability of a product or package to be used more than once in its same form.

Re-use: the use, in the same form as it was produced, of a material which might otherwise be discarded.

Rubber: an amorphous polymer or isoprene derived from natural latex of certain tropical plants or from petroleum.

Salvage: the controlled removal of solid waste materials at a permitted solid waste facility for recycling, re-use, composting, or transformation.

Seasonal: those periods of time during the calendar year which are identifiable by distinct cyclical patterns of local climate, demography, trade or commerce.

Sewage sludge: residual solids and semi-solids resulting from the treatment of waste water, but does not include waste water effluent discharged from such treatment processes.

Short-term planning period: a period beginning in the year 1991 and ending in the year 1995.

SIC Code: the standards published in the U.S. Standard Industrial Classification Manual (1987), which is herein incorporated by reference.

Sludge: residual solids and semi-solids resulting from the treatment of water, waste water, and/or other liquids. Sludge includes sewage sludge and sludge derived from industrial processes, but does not include waste water effluent discharged from such treatment processes.

Solid Waste Generation Study: the study undertaken by a jurisdiction to characterize its solid waste stream and comply with all the requirements of section 18722, Chapter 9, Title 14.

Solid waste facility: includes a disposal facility, a disposal site, and a solid waste transfer or processing station.

Solid waste handling: the collection, transportation, storage, transfer, or processing of solid wastes.

Source reduction: any action which causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of nonrecyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce the amount of wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials in the manufacturing process. Source reduction does not include steps taken after the material becomes solid waste or actions which would impact air or water resources in lieu of land, including, but not limited to, transformation.

Source Reduction and Recycling Element (SRRE): the source reduction and recycling element required pursuant to Public Resource Code section 41000 and 41300.

Source separated: the segregation, by the generator, of materials designated for separate collection for some form of materials recovery or special handling.

Special waste: any hazardous waste listed in section 66740 of Title 22 of the California Code of Regulations, or any waste which has been classified as a special waste pursuant to section 66744 of Title 22 of the California Code of Regulations, or which has been granted a variance for the purpose of storage, transportation, treatment, or disposal by the department of Health Services pursuant to section 66310 of Title 22 of the California Code of Regulations. Special waste also includes any solid waste which, because of its source of generation, physical, chemical or biological characteristics, or unique disposal practices, is specifically conditioned in a solid waste facilities permit for handling and/or disposal.

State water board: the State Water Resources Control Board.

Statistically representative: those representative and random samples of units that are taken from a population sample, pursuant to the procedures given in Appendix 1 of Article 6.1, Chapter 9, Title 14. For the purposes of this definition, population sample includes, but is not limited to, a sample from a population of solid waste generation sites, solid waste facilities and recycling facilities, or a population of items of materials and solid wastes in a refuse vehicle load of solid waste.

Tin can or tin container: any food or beverage container that is composed of steel with a tin coating.

Ton: a unit of weight in the U.S. Customary System of Measurement, an avoirdupois unit equal to 2,000 pounds. Also called short ton or net ton.

Transfer or processing station: those facilities utilized to receive solid wastes, temporarily store, separate, covert, or otherwise process the materials in the solid wastes, or to transfer the solid wastes directly from smaller to larger vehicles for transport, and those facilities utilized for transformation.

Transformation facility: a facility whose principal function is to convert, combust, or otherwise process solid waste by incineration, pyrolysis, destructive distillation, or gasification, or to chemically or biologically process solid wastes, for the purpose of volume reduction, synthetic fuel production, or energy recovery. Transformation facility does not include a composting facility.

Volume: a three dimensional measurement of the capacity of a region of space or a container. Volume is commonly expressed in terms of cubic yards or cubic meters. Volume is not expressed in terms of mass or weight.

Waste categories: the grouping of solid wastes with similar properties into major solid waste classes, such as grouping together office, corrugated and newspaper as a paper waste category, as identified by the solid waste classification system contained in section 18722 of Article 6.1, Chapter 9, Title 14, except where a component-specific requirement provides alternative means of classification.

Waste generator: any person, as defined by section 40170 of the Public Resources Code, whose act or process produces solid waste as defined in Public Resources Code section 40191, or whose act first cause solid waste to become subject to regulations.

Waste type: identified wastes having the features of a group or class of wastes which are distinguishable from any other waste type, as identified by the waste classification system contained in section 18722 of Article 6.1, Chapter 9, Title 14, except where a component-specific requirement provides alternative means of classification.

White goods: discarded, enamel-coated major appliances, such as washing machines, clothes dryers, hot water heaters, stoves and refrigerators.

Wood waste: solid waste consisting of wood pieces or particles which are generated from the manufacturing or production of wood products, harvesting, processing or storage of raw wood materials, or construction and demolition activities.

Yard waste: any wastes generated from the maintenance or alteration of public, commercial or residential landscapes including, but not limited to, yard clippings, leaves, tree trimmings, prunings, brush, and weeds.

Note: Authority cited: Sections 40502 and 41824, Public Resources Code.

Reference: Sections 41000, 41300 and 41823, Public Resources Code.

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